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AUDIOVISUAL MEDIA IN THE PUBLIC SCHOOLS, 1961-64--A PROFILE OF CHANGE.
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A FOLLOWUP SURVEY WAS MADE OF 238 SCHOOL DISTRICTS OF VARIOUS SIZES ACROSS THE UNITED STATES TO SURVEY CHANGES IN THE USE OF AUDIOVISUAL RESOURCES OVER AN INTERVENING 3-YEAR PERIOD. THE SURVEY EXAMINED NOT ONLY THE EXTENT AND DURATION OF CHANGE, BUT ALSO THE IMPACT OF VARIOUS SCHOOL DISTRICT CHARACTERISTICS ON CHANGE. FROM QUESTIONNAIRES ADDRESSED TO THE SUPERINTENDENT OF EACH DISTRICT, INFORMATION WAS GATHERED CONCERNING (1) THE ORGANIZATION AND ADMINISTRATION OF THE DISTRICT'S AUDIOVISUAL PROGRAM, (2) THE AMOUNT OF EQUIPMENT ON HAND FOR EACH OF THE MAJOR AUDIOVISUAL MEDIA, (3) THE NUMBER OF ADDITIONAL AUDIOVISUAL ITEMS NEEDED TO SERVE THE DISTRICT'S CURRENT TEACHING PROGRAM AND ENROLLMENT, (4) THE FUTURE USE PLANNED FOR EACH MEDIA, AND (5) THE OVERALL CHARACTERISTICS OF THE DISTRICT AND ITS USE OF AUDIOVISUAL METHODS. (JH)

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A Profile of Change

BUREAU OF SOCIAL SCIENCE RESEARCH, INC.

WASHINGTON, D. C.

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AUDIOVISUAL MEDIA IN THE PUBLIC SCHOOLS, 1961-64:

A Profile of Change

Report Prepared for:

The U. S. Office of Education

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I. INTRODUCTION

In 1960 the Bureau of Social Science Research began an extensive study of the availability and use of audiovisual resources in public education. A nationwide survey of 2,927 public school districts produced national estimates of the amount of audiovisual equipment and materials available for classroom use in the spring of 1961. A subsequent survey of principals and teachers in 572 schools in 247 districts provided data on how the resources were used by teachers in different grade levels and subject specialties in 1962.[1] The fourth report in the series presents the major findings from a follow-up survey of 238 of these same districts in the winter of 1963-64. Returning to school systems on which previous data were available enabled us to examine change in audiovisual resources over the intervening three-year period; not only the extent and direction of change, but the impact of various school district characteristics on change.

From questionnaires addressed to the superintendent in each year information was gathered concerning the organization and administration of the district's audiovisual program, the amount of equipment on hand for each of the major audiovisual media, the number of additional items needed to serve the system's "present teaching program and enrollment," the superintendent's plans for future use of each medium and other data relating to characteristics of the district and its use of audiovisual methods. In 1964 the superintendent was asked for the major reasons for adoption or nonadoption of five of the newer media. Both questionnaires are attached in Appendix B.

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[1] Pursuant to U. S. Office of Education Contracts #SAE-9026 and OE 3-16-038. Previous reports derived from this series of surveys by the Bureau of Social Science Research are: "Audiovisual Equipment and Materials in U. S. Public School Districts - Spring 1961" (August 1962); "Audiovisual Programs in the Public Schools - Spring 1962" (June 1964); and "Factors Associated with Use of Audiovisual Media by Teachers in Elementary and Secondary Schools" (December 1964).

The basic sample for all studies conducted since 1961 was drawn from the 2,500 school systems enrolling 150 to 24,999 pupils which had participated in the initial survey of school district resources. The upper enrollment size limit was set in order to minimize the problem of sampling schools within a district; the lower enrollment size limit was set in order to include only those districts which were large enough to have a variety of audiovisual resources available for teacher use. The 2,500 districts were stratified by region and district size. A 10 per cent random sample of each regional-size group was drawn, yielding an original sample of 253 districts for the 1962 study and a final sample of 240 districts for the 1964 study, 238 of whom participated in the follow-up survey.[2] The distribution of respondents by geographic region and enrollment size category is shown in Table 1.

Throughout the report the emphasis is on change. The general growth in audiovisual resources from June 1961 to January 1964 is described in Chapter II. The relationships between certain characteristics of school districts as educational institutions and inventory increase

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[2] The sample size decreased from 253 to 238 from 1961 to 1964 for the following reasons:

1. Six districts did not respond to the 1962 survey of teacher use.
2. Six districts were used to pretest the follow-up procedure.
3. Two districts consolidated between 1962 and 1964.
4. Two districts did not respond to the 1964 survey.

TABLE 1

DISTRIBUTION OF SAMPLE PUBLIC SCHOOL DISTRICTS BY GEOGRAPHIC REGION AND DISTRICT SIZE

District Size	Number of Districts	Number of Districts in Each Region[a]			
		North Atlantic	Great Lakes, Plains	South-east	West, Southwest
Total	238	67	68	40	63
2 - 12,000-24,999 pupils	16	3	3	6	4
3 - 6,000-11,999 pupils	34	7	7	11	9
4 - 3,000-5,999 pupils	56	15	12	15	14
5 - 1,200-2,999 pupils	58	18	20	6	14
6 - 600-1,199 pupils	30	9	11	1	9
7 - 300-599 pupils	27	9	10	1	7
8 - 150-299 pupils	17	6	5	-	6

[a] Regional categories are those commonly used by the U. S. Office of Education.

are examined in Chapter III. The associations between inventory levels and plans and inventory increase are analyzed in Chapter IV. Reasons for adoption or nonadoption of five newer media are discussed in Chapter V. A prediction model for future growth is proposed in Chapter VI.

Major findings and summary tables are presented and discussed in the text. More detailed analyses, primarily by district size, are presented in Appendix A. Throughout the appendix tables school district size is designated by a single number rather than by the number of pupils enrolled. The code numbers represent the following enrollment size categories:

2	12,000 - 24,999 pupils
3	6,000 - 11,999 pupils
4	3,000 - 5,999 pupils
5	1,200 - 2,999 pupils
6	600 - 1,199 pupils
7	300 - 599 pupils
8	150 - 299 pupils

In 1961 audiovisual programs in the nation's public schools were organized around the 16 mm projector, record player, slide-filmstrip projector, and tape recorder. These items were available in sufficient quantity in districts with enrollments of 150 to 24,999 pupils to provide on the average one projector for every twelve teachers, one record player for every four teachers, and one tape recorder for every sixteen teachers. Although the four pieces of equipment were the major vehicles for audiovisual instruction, the supply of television sets and overhead projectors had increased rapidly since their introduction into public education in the 1950's. By 1961, there were approximately as many television sets as there were opaque projectors, and one overhead projector for each 95 - 100 teachers in the 15,620 districts with enrollments of 150 to 24,999 pupils. (See Table A-1.)

The 1964 resurvey concentrated on "middle-sized" districts for reasons outlined in the previous discussion of the sampling procedure. Teacher-equipment and pupil-equipment ratios for the 238 sample districts were similar to those estimated for the total population in the eight size categories surveyed for all items, with the possible exception of the overhead projector. (See Table A-1.) If one can assume that trends in the country as a whole were similar to those observed among the sample districts, the findings of this intensive follow-up study of a group of school systems will provide the planner with useful data on the dynamics of educational change.

II. CHANGES IN AUDIOVISUAL RESOURCES AND ASPIRATIONS--1961 TO 1964

Public school districts do not stand still. They build schools, add teachers and enlarge classes to house and instruct the ever increasing pupil population. Can they meet these primary demands and still increase their investment in technological equipment? The findings from this survey indicate not only that they can, but that they did during the three-year period covered by the study.

Change in Audiovisual Resources

Increases in the numbers of pupils, teachers, schools, and in the amount of nine items of audiovisual equipment are given in Table 2, and detailed by district size in Tables A-2 through A-8. The sample districts responded to a 14 per cent increase in pupil population with a 19 per cent increase in teachers and a 5 per cent increase in schools. During the same period, these districts were able to increase their inventories of nine items of audiovisual equipment from a minimum of 27 per cent (for 16 mm projectors) to a maximum of 176 per cent (for overhead projectors).

The relatively greater increase in audiovisual equipment resources over that experienced for either pupils or teachers held true for districts of all size categories. The only notable exceptions to the general expansion were found among the smallest school systems (those enrolling 150 - 300 pupils) which did not match their population increase with a similar increase in 16 mm projectors or television sets. (Cf. Tables A-2 and A-8.)

TABLE 2

INCREASE IN PUPILS, TEACHERS, SCHOOLS, AND NINE ITEMS OF AUDIOVISUAL EQUIPMENT 1961-1964 FOR 238 DISTRICTS

Statistic	Number in 1961	Number in 1964	Per Cent Increase
Pupils	949,732	1,083,341	14.1
Teachers	37,925	45,254	19.3
Schools	2,096	2,206	5.2
Audiovisual Equipment			
16mm projector	3,451	4,374	26.7
Slide-filmstrip projector	3,136	4,024	28.3
Record player	10,109	13,356	32.1
Tape recorder	2,440	3,780	54.9
Opaque projector	1,121	1,492	33.1
Radio	1,943	2,585	33.0
Television set	1,068	2,383	123.1
Overhead projector	437	1,204	175.5
Language laboratory	91	193	112.1

The general expansion in the amount of audiovisual equipment available for classroom use has made audiovisual resources in the different district size categories more comparable. Not only were there substantial increases in the total amount of audiovisual equipment available, but there were important gains in the number of districts which had each piece of equipment. Ownership figures for both 1961 and 1964 are given in Table 3 and detailed by district size in Tables A-9 and A-10. By 1964 all of the sample districts had 16 mm and slide-filmstrip projectors;[3] all but five had tape recorders; and all but 24 had opaque projectors. Although television sets and overhead projectors were still found more frequently in the larger school systems, they were available in 40 per cent or more of the districts enrolling at least 300 pupils. Language laboratories were also concentrated in the larger systems; however, six of the 47 districts with fewer than 600 pupils had acquired one of these installations between 1961 and 1964.

Relative Inventory Increase

On the average, there was significant growth in the amount of audiovisual equipment available to the classroom teacher from 1961 to 1964. But averages have a way of obscuring their component parts. School districts are living organisms--they grow; they consolidate; they reorganize. Depending upon the number of pupils, teachers, or schools served in 1964 as against those served in 1961, a school district may buy additional audiovisual equipment and be relatively better off, worse off, or at its original inventory position. Some common denominator is needed to equate the two time periods. Such a measure might be

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[3] Districts without a combination slide-filmstrip projector had either a slide or a filmstrip projector, or both.

TABLE 3

INCREASE IN DISTRICT OWNERSHIP OF NINE ITEMS OF AUDIOVISUAL EQUIPMENT 1961-1964 FOR 238 DISTRICTS

Equipment	1961 Ownership		1964 Ownership	
	Number	Per Cent	Number	Per Cent
16mm projector	237	99.6	238	100.0
Slide-filmstrip projector	223	93.7	232	97.5
Record player	234	98.3	238	100.0
Tape recorder	227	95.4	233	97.9
Opaque projector	202	84.9	214	89.9
Radio	161	67.6	182	76.5
Television set	130	54.6	162	68.1
Overhead projector	111	46.6	188	79.0
Language laboratory	66	27.7	123	51.7

constructed for the ultimate consumer, the student; the user of audiovisual equipment, the teacher; or for the repository of audiovisual equipment, the school. Each measure has its merits. We used the amount of equipment per teacher to describe the growth of audiovisual equipment available for classroom use. The National Education Association used the amount of equipment per 10,000 students to assess expansion in audiovisual education from 1946-1954.[4] Minimum standards for equipment inventories have been suggested for schools and/or teaching stations.[5]

The amount of equipment per school has certain advantages for measuring relative inventory increases over time. First, data from our 1961 survey suggest that the administrator is acutely conscious of the number of school plants in his district when he plans his equipment purchases. The American ideal of equality of opportunity requires that he provide at least one unit of every essential type of equipment for each of his schools. Second, to build or close a school is a major decision for any school board and is a response to a substantial long-term change in enrollment. Therefore, relative inventory increase over time was measured for each of the nine types of audiovisual equipment by subtracting the number of equipment units per school in 1961 from the number of equipment units per school in 1964, as shown below:

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[4] National Education Association, Research Division, "Audiovisual Education in Urban School Districts, 1953-54," Research Bulletin 33, October 1955.

[5] Cf. Anna L. Hyer, "Setting Equipment Standards." Audiovisual Instruction, December 1961, pp. 506-510; and Gene Faris, "Tentative Guidelines for Audiovisual Personnel and Equipment," Audiovisual Instruction, March 1965, pp. 201-204.

$$\begin{array}{ccccc} \underline{1964} & & \underline{1961} & & \\ \dfrac{\text{Number of Units of Equipment Item}}{\text{Number of Schools in District}} & - & \dfrac{\text{Number of Units of Equipment Item}}{\text{Number of Schools in District}} & = & \text{Inventory Change} \end{array}$$

This statistic was computed for each medium for each of the 238 school districts studied. The denominator in each ratio is the total number of schools in the district at that time for all media except the language laboratory. Relative inventory change for these installations was based on the number of secondary schools in the district.

Relative inventory change and the median increase for each item of equipment are summarized in Table 4. The majority of the 238 districts were relatively better off in 1964 for six of the nine media. Although inventory losses were concentrated among districts which added schools without a commensurate increase in the amount of audiovisual equipment, not all of the growing systems lost ground. Seventy three, or 31 per cent of the sample gained schools, yet no more than 16 per cent of the sample reported a relative inventory decrease for any item of equipment. Very few districts reported a decrease in the absolute amount of any type of equipment and these reports were mainly for radios--the item most difficult to count and most transient of all in the survey.

Systems with fewer than 600 pupils were the most "status quo" districts for all items. Aside from the largest size category where 69 per cent of the districts reported relative increases, the language laboratory was the most "status quo" item. Inventory gains

TABLE 4

CHANGE IN NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR 238 DISTRICTS

Equipment	Per Cent of Districts Reporting			Median Increase Per School[a]
	Increase	No Change	Decrease	
16mm projector	62.2	24.8	13.0	0.39
Slide-filmstrip projector	56.7	28.2	15.1	0.44
Record player	71.0	16.0	13.0	1.10
Tape recorder	70.6	20.6	8.8	0.51
Opaque projector	51.3	33.6	15.1	0.24
Radio	40.7	43.7	15.6	0.48
Television set	45.0	47.0	8.0	0.49
Overhead projector	67.6	26.9	5.5	0.39
Language laboratory	30.7	65.5	3.8	0.50[b]

[a] Median increase for districts reporting an increase (not for the total sample of 238 districts).

[b] Calculated on the number of secondary schools rather than the total number of schools in the district.

for slide-filmstrip projectors, television sets, and opaque projectors varied directly with district size. Sixty per cent or more of all districts with at least 600 pupils increased the number of record players, tape recorders, overhead projectors, and 16 mm projectors available per school. (See Table A-15 for the per cent of districts reporting inventory increase for each item of equipment in each district size category.)

The magnitude of the inventory increases was substantial. The lowest median increase was .24 units per school for opaque projectors; the highest was 1.10 units per school for record players. Some of the individual increases were quite spectacular; increases of 12, 10, and 9 units per school were reported for tape recorders, record players, and television sets.[6] Smallest maximum increases were reported for opaque projectors (1.15 units per school), 16 mm projectors (two units per school) and language laboratories (one unit for each secondary school). As a result of the general increase in amount of equipment per school, the median inventory level shifted upward for all items except radio which remained constant at one unit per school over the three year period. (See Tables A-16 and A-17 for the distribution of units of increase and change in the distribution of number of units per school.)

In 1964, assuming that he had all nine types of equipment, the superintendent of the hypothetical median district had one overhead projector for each two schools, seven television sets for each ten schools, two language laboratories for three secondary schools, and enough tape recorders, 16 mm projectors, slide-filmstrip projectors, and record players to put one in each school and multiple units in some schools, presumably the larger ones.

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[6] Median rather than mean increase was used as the summary statistic so as not to give exaggerated weight to the relatively small number of districts reporting large increases.

Change in Aspirations

Dramatic and pervasive as these increases in audiovisual resources were, they fail to tell us whether or not the districts had all the equipment they would like to have. In both 1961 and 1964, the superintendent was asked to estimate the number of additional units of each type of equipment he needed to "serve his present teaching program and enrollment." The question was phrased in this manner in order to obtain a report of realistic need, rather than maximum desire given the best of all possible worlds.

Growth in 1964 corresponded closely with expressed needs in 1961; not only with the needs of the sample school districts but with the estimated needs for the country as a whole.[7] As shown in Table 5, the largest inventory increases were achieved for overhead projectors, language laboratories, and television sets. There was a similar correspondence between relative need position and relative gain for the other six equipment items.

When we compare the magnitude of the achieved increase with that desired three years earlier, we find that the 238 districts had surpassed their 1961 needs for five items (the 16 mm projector, slide-filmstrip projector, record player, tape recorder, and overhead projector)

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[7] Eleanor P. Godfrey, Audiovisual Equipment and Materials in U. S. Public School Districts - Spring 1961. Grade Teacher. November 1962, Table 3.

TABLE 5

COMPARISON OF DESIRED PERCENTAGE INCREASE IN AMOUNT OF EQUIPMENT IN 1961 WITH ACTUAL PERCENTAGE INCREASE REPORTED IN 1964 FOR 238 DISTRICTS

Equipment	Per Cent Increase Desired in 1961	Per Cent Increase Reported in 1964	Difference
16mm projector	15.3	26.7	11.4
Slide-filmstrip projector	20.5	28.3	7.8
Record player	14.6	32.1	17.5
Tape recorder	32.9	54.9	22.0
Opaque projector	41.7	33.1	- 8.6
Radio	36.6	33.0	- 3.6
Television set	127.7	123.1	- 4.6
Overhead projector	161.6	175.5	13.9
Language laboratory	182.5	112.1	- 70.4

but failed to achieve the desired magnitude of increase for the other four media.

Granted that these districts had managed by 1964 to exceed their 1961 needs for five types of equipment, how well were they doing by 1964 standards? Let us assume that the number of units owned plus the number of units needed equals the "ideal" amount of equipment necessary to meet instructional needs at any point in time. This sum can then be used in conjunction with other sums--total teachers, total pupils, or total schools--to arrive at an ideal amount of equipment per school or an ideal number of teachers or pupils per unit of equipment. A comparison of such an ideal ratio with a similar ratio based on actual inventories should indicate how successful the school systems have been in achieving their goals.

Reported and ideal number of teachers per unit of equipment for both 1961 and 1964 are shown in Table 6 (and by district size in Tables A-11 through A-14) for all media except the language laboratory.[8] Reported teacher-equipment ratios were reduced during the three-year period for all types of equipment. These reductions varied from a modest .4 of a teacher for each record player to a substantial 49 teachers for each overhead projector. With minor variations for opaque projectors and radios there was a reduction in teacher-equipment ratios for all media in all but the smallest districts. In these latter districts

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[8] A complete language laboratory is essentially a special kind of classroom. Either the expense of the installation or the limitation of its use to intensive instruction in foreign languages has kept the language laboratory in the secondary schools. Analysis of the patterns of ownership and need reported in this survey indicate that the 1964 ideal was one such installation for every senior high school. Whether or not a junior high school should have a language laboratory depended upon the grade span, size, and language program provided by the school system.

TABLE 6

CHANGE IN REPORTED AND "IDEAL" NUMBER OF TEACHERS PER UNIT OF EQUIPMENT 1961-1964 FOR 238 DISTRICTS

Equipment	Teachers per Unit 1961		Teachers per Unit 1964	
	Reported	Ideal[a]	Reported	Ideal[a]
16mm projector	11.0	9.5	10.4	8.7
Slide-filmstrip projector	12.1	10.0	11.2	9.3
Record player	3.8	3.3	3.4	3.0
Tape recorder	15.5	11.7	12.0	9.4
Opaque projector	33.8	23.9	30.3	24.1
Radio	19.5	14.3	17.5	12.3
Television set	35.5	15.6	19.0	10.0
Overhead projector	86.8	33.2	37.6	14.8

[a] "Ideal" is operationally defined as the number of teachers/ number of units owned + number of additional units needed.

(which have 150 - 300 students), teaching staffs had grown without a parallel increase in equipment for four items--the 16 mm projector, slide filmstrip projector, record player, and most notably, the television set.

Educational progress is difficult to chart. No sooner do school districts "catch up" with where they should have been last year, or the year before, than they raise their standards. Actual teacher-equipment ratios in 1964 approached ideal teacher-equipment ratios for 1961. But in the interim the ideals had changed; ratios which would have been close to ideal in 1961 were not good enough by 1964 standards, with the possible exception of the record player. The most striking change took place in the ideal for the overhead projector which increased from one unit for every 33 teachers in 1961 to one unit for every 15 teachers in 1964. The tendency to want more equipment per teacher was consistent for all district size categories except the very smallest and for all media except the opaque projector.

1964 Equipment Standards

Increasing similarity between both actual and ideal teacher-equipment ratios across district size categories indicates that educators are evolving similar equipment standards, regardless of the number of pupils they serve. If we assume that each school in the system should have ready access to every appropriate piece of equipment and that the amount of equipment in the school should be increased when the number of teachers and pupils warrants multiple units, these standards may be used to judge the adequacy of the audiovisual equipment resources in any district.[9]

The model school district described in Table 7 was equipped according to the teacher-equipment ratios desired by the survey respondents. The system serves 4,800 pupils housed in six elementary schools, two junior high schools, and one senior high school. Since this is a model district, all of the elementary schools are equal in size with 400 pupils and 15 teachers each; each junior high school has 600 pupils and 25 teachers; the comprehensive senior high school has 1,200 students and 60 teachers. There are 199 pieces of audiovisual equipment distributed throughout the district in such a manner as to approximate the ideal teacher-equipment ratio in each school except for record players and the language laboratory. The former were concentrated more heavily in the elementary schools in line with current practice, and the latter was available only in the senior high school as the junior high schools in the model were not large enough to justify this installation.

The reader is invited to compare his favorite school district with the model and decide which of the two is found wanting, bearing in mind that his system is not expected to provide this much equipment in each of its schools before the 1966-1967 school year.

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[9] The empirically derived equipment standards may be compared with the equipment guidelines proposed by the DAVI Subcommittee on Professional Audiovisual Standards published in Audiovisual Instruction, March 1965, pp. 202-204. The sample standards are similar to the guidelines for a "good" high school program for all items except the opaque and overhead projectors, and the television set. The proposed equipment guidelines would put 20 overhead projectors, 4 opaque projectors, and 1 television set per department in a good audiovisual program for a 60 teacher senior high school. The sample standards fail to meet the suggested guidelines for a good elementary program for slide-filmstrip projectors, overhead projectors, and tape recorders. Each of the elementary schools in the model should have 5 of the first, 4 of the second and 3 of the third.

TABLE 7

"IDEAL" DISTRIBUTION OF AUDIOVISUAL EQUIPMENT FOR A MODEL SCHOOL DISTRICT OF 4,800 PUPILS[a]

District organization: 6-3-3

Schools:
6 elementary with 15 teachers, 400 pupils
2 junior high with 25 teachers, 600 pupils
1 senior high with 60 teachers, 1200 pupils

Equipment	Total in District	Per Each Elementary	Per Each Junior High	Senior High
16mm projector	22	2	2	6
Slide-filmstrip projector	22	2	2	6
Record player	69	8	6	9
Tape recorder	25	2	3	7
Opaque projector	10	1	1	2
Radio	15	1	2	5
Television set	21	2	2	5
Overhead projector	14	1	2	4
Language laboratory	1	-	-	1

[a] Constructed from superintendents' "ideal" ratio of teachers per unit of equipment for 238 districts. Record player distribution adjusted to place more units in elementary schools in line with current practice.

III. THE IMPACT OF DISTRICT CHARACTERISTICS ON INCREASE IN AUDIOVISUAL EQUIPMENT INVENTORIES

Any study of a social institution is predicated on the assumption that the structure of the institution influences its functioning. The size of the educational system (e. g., the number of pupils it serves) has been a major classificatory variable throughout our series of studies of audiovisual programs in the public schools. Let us now consider the relationship between certain characteristics of the school district as an educational system and change in relative inventory position.

Elementary teachers use all types of audiovisual equipment, except tape recorders, more frequently than secondary teachers. It is reasonable to assume that this greater frequency of use will be reflected in the buying habits of districts which have only elementary schools. A large number of schools in a district can generate a demand for more equipment per school, if only to cut down on the expense and annoyance of rotating equipment from the central office. However, an expensive building program or a drive to lower the pupil-teacher ratio may postpone the satisfaction of this demand. Wealthy districts (as measured by the amount of "free" wealth available for all types of instructional materials, including audiovisual media) should expand their supply of equipment more rapidly than less affluent school systems.[10]

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[10] No measure of school district wealth is completely satisfactory. Total expenditure per pupil may be relatively high or low because of a large or small amount of capital outlay and debt service for construction. Current expenditure per pupil is directly related to the district salary structure, the number of pupils enrolled, and transportation costs. The instructional materials budget is the most flexible of the three. Districts will spend more or less on the tools of instruction, depending upon how much the taxpayers are willing to provide above and beyond the basic necessities of buildings, teachers, and transportation.

Each of the variables discussed above is itself related to district size. Districts with 6,000 to 25,000 students more often span all twelve grades, have more schools in the system, and are building schools faster than are districts with 1,200 or fewer pupils. They also have higher pupil-teacher ratios, which they are endeavoring to lower, and spend somewhat less per pupil for instructional materials. (See Tables A-18 through A-22.) But not all districts in the same enrollment size category are alike. Therefore, an examination of the association between these structural variables and inventory increase may provide useful insights into the kinds of districts which were most likely to increase the amount of audiovisual equipment per school from 1961 to 1964.

Type of School District

For all media, except radio, there was a higher incidence of increase in the amount of equipment per school among districts with both elementary and secondary schools. Since the number of elementary districts is small, no strong conclusions may be derived from the findings presented in Table 8, but some possible implications of the data may be sketched here.

Disparities between the two groups for the language laboratory and overhead projector fit the assumption that buying patterns will be compatible with current practice. Analysis of the grade-subject location of effective use of each medium[11] indicates that language laboratories were employed essentially in foreign language instruction at the high school level, rather than as general "learning laboratories." The name

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[11] See Tables 23 and 24, pp. 65 and 66.

TABLE 8

TYPE OF DISTRICT AND INCREASE IN NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR 232 DISTRICTS[a]

Equipment	Per Cent Reporting Increase For: Elementary Districts	Combined Districts
(Number of Districts)	(32)	(200)
16mm projector	37.5	66.0
Slide-filmstrip projector	53.1	58.0
Record player	59.4	73.0
Tape recorder	65.6	72.0
Opaque projector	25.0	54.5
Radio	46.9	40.5
Television set	40.6	46.0
Overhead projector	50.0	70.0
Language laboratory	12.5	32.5

[a] Six districts with only secondary schools were omitted from this analysis.

itself may have restricted their function. Or the availability of French and Spanish courses on open circuit television (and more recently on 8 mm film) may have dampened the enthusiasm for laboratory language training in the elementary grades. The overhead projector has also been historically a tool for secondary instruction, although elementary teachers are becoming more interested in using transparencies.[12]

Differential increases for the 16 mm and opaque projectors and the record player were not in line with current practice. All three of these media were used more frequently in the elementary schools. Perhaps a significant number of the elementary districts, particularly the smaller ones, had already achieved what they considered to be an adequate inventory level for these items. Certainly one or two units of equipment go farther in a 10 - 15 teacher school (the typical size range in an elementary district) than they do in a 50 teacher high school.

Instructional Materials Expenditure

The amount of money spent for each student for instructional materials was computed on the basis of instructional materials expenditures for 1959-60--the latest year for which we had complete data on both expenses and average daily attendance. Assuming that the sample districts continued to spend approximately the same amount per pupil during the survey period, these figures can serve as a rough measure of the funds available for all types of instructional materials, including audio-visual equipment, from 1961 to 1964.

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[12] The 1962 Bureau of Social Science survey of teacher practices found that 30 per cent of the elementary teachers who had access to an overhead projector planned to increase their use of that medium.

We expected the relationship between expenditures for instructional materials and inventory increases to be a direct one: the more a district spends, the higher the probability of increase in the amount of audiovisual equipment per school. Again the expectations were not fulfilled. The data in Table 9 support the hypothesis only for language laboratories, and then not too strongly. A strong negative association would fit the saturation argument; e.g., districts who had spent 20 or more dollars per pupil a year for a number of years might be expected to have arrived at optimum equipment-school ratios. The data suggest that this argument may have some validity for record players and radios.

However, the general independence between instructional materials expenditures and inventory increase remains a puzzle. Perhaps other funds (e.g., bond money) are used for equipment purchases among districts which have low current expenditure ratios. Perhaps the instructional materials budget varies more widely from year to year than we had supposed. However, an analysis of the relationships between total current expenditure per pupil (a more stable ratio) and increase in audiovisual inventories yielded results similar to those presented in Table 9. (See Table A-23.)

Number of Schools

The association between the number of schools in the system and inventory increase was the most striking of all the relationships between district characteristics and expansion of audiovisual resources. As shown in Table 10, relative inventory increase was positively related with the number of schools in the system. The only reversal in the table is for language laboratories in the very large districts. That

TABLE 9

1960 PER PUPIL EXPENDITURE FOR INSTRUCTIONAL MATERIALS AND INCREASE IN NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR 235 DISTRICTS[a]

Equipment	Per Cent of Districts Reporting Increase When Per Pupil Expenditure Was:		
	$1-12	$13-22	$23+
(Number of Districts)	(114)	(77)	(44)
16mm projector	68.4	54.5	61.4
Slide-filmstrip projector	60.5	54.5	54.5
Record player	75.4	74.0	54.5
Tape recorder	71.9	70.1	68.2
Opaque projector	54.4	48.0	50.0
Radio	46.5	39.0	31.8
Television set	46.5	52.0	27.3
Overhead projector	65.8	72.7	65.9
Language laboratory (secondary schools only)	30.9	31.8	43.9

[a] Three districts did not report their 1960 Instructional Materials Expenditure.

TABLE 10

NUMBER OF SCHOOLS AND INCREASE IN NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR 238 DISTRICTS

Equipment	Per Cent Reporting Increase When Number of Schools Was:			
	1-2	3-5	6-11	12-44
(Number of Districts)	(51)	(61)	(65)	(61)
16mm projector	29.4	60.7	72.3	80.3
Slide-filmstrip projector	27.4	55.8	66.1	72.1
Record player	49.0	70.6	75.4	85.2
Tape recorder	41.2	72.2	77.0	86.9
Opaque projector	19.6	47.6	60.1	72.1
Radio	21.6	29.6	49.2	59.0
Television set	17.6	31.2	53.9	72.1
Overhead projector	29.4	73.8	80.0	80.3
Language laboratory (secondary schools only)	26.5	26.8	41.9	34.5

at least 70 per cent of the systems with twelve or more schools reported increases for seven of the nine items is noteworthy. These districts were concentrated in the three largest enrollment categories which already had the largest amount of standard equipment (see Table A-24) and the highest incidence of ownership of the newer media (see Table A-9).

On the other hand, less than 50 per cent of the one or two school districts reported increases for any of the nine items. Failure to buy more of the "older media" might be explained by the saturation, or optimum ratio argument. One or two units may be sufficient for a small district. The same line of reasoning cannot be used, however, to explain the failure to acquire television sets, language laboratories, or overhead projectors as rapidly as systems with more schools--unless none at all can be considered optimum. Rather, small districts may find certain technological devices either inappropriate (e.g. language laboratories) or inaccessible (e.g. television) given their curriculum needs and geographic location.

Change in Number of Schools

The results of the analysis of the association between gain in number of schools and inventory increase, given in Table 11, are somewhat surprising. We expected that growth in the amount of equipment available per school might be limited by the cost of new construction.[13] Contrary to expectations, the majority of the districts which built schools also improved their relative inventory position for all items but the radio and the language laboratory.

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[13] Only two of the 73 districts which gained schools did so through annexation.

TABLE 11

CHANGE IN NUMBER OF SCHOOLS AND INCREASE IN NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR 216 DISTRICTS[a]

Equipment	Per Cent Reporting Increase When: No Change in Number of Schools	Gained One School	Gained Two or More Schools
(Number of Districts)	(143)	(35)	(38)
16mm projector	58.7	65.7	50.0
Slide-filmstrip projector	54.5	51.4	50.0
Record player	72.7	62.8	55.3
Tape recorder	67.1	71.4	71.0
Opaque projector	47.6	45.7	55.3
Radio	35.0	42.8	52.6
Television set	37.1	48.6	68.4
Overhead projector	63.6	68.6	76.3
Language laboratory (secondary schools only)	31.9	43.8	42.8

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[a] Twenty-two districts which lost schools through district reorganization and consequently had an automatic increase in amount of equipment per school are not included in this analysis.

Indeed, school construction was positively related with inventory increase for television sets and overhead projectors. The expected negative association was found only for slide-filmstrip projectors and record players. Perhaps the construction of a new school environment encourages the utilization of new instructional techniques. And, not to be overlooked, if the cost of the equipment is included in the bond issue for the new school, equipment expansion can take place without draining current operating funds.

Sociologists have long advocated that new techniques are adopted most rapidly in complex societies with expanding populations. The relationships between audiovisual inventory increases (particularly for the newer media) and the variety of the educational offerings, the number of schools in the system, and the amount of new school construction support this contention. Change breeds more change. The predictability of the future in a small stable district with a relatively restricted curriculum may be a greater hindrance to increased use of new teaching techniques than lack of money or size per se.

IV. INVENTORY INCREASE AS A FUNCTION OF PROGRAM ADMINISTRATION, PLANS, AND INVENTORY LEVELS

The discussion to this point has been concerned with the relationship between general characteristics of the school system and increases in audiovisual equipment inventories. But each of the sample districts already had some kind of an audiovisual program in 1961. A positive, neutral, or negative orientation toward the use of projected or recorded materials in the classroom should influence the pattern of inventory growth. So should the type and amount of equipment on hand. Do the rich continue to get richer, or is there a point of diminishing returns?

General Orientation Toward Audiovisual Programs

Each superintendent was asked whether he thought audiovisual materials were best used as an integral part of a course of instruction, for supplementary information, or to highlight a special unit of work. He was also asked to report the position of the district level audiovisual coordinator.

Both of these orientation variables were related to district size as well as to each other. The audiovisual program in large districts was typically administered by an audiovisual director or some other member of the central administrative staff; the program in small districts was most frequently administered by the superintendent himself, a principal, or a classroom teacher. And respondents from large districts were more often positively oriented toward the use of audiovisual techniques as an integral part of the curriculum. (See Tables A-25 and A-26.)

The expectation that the superintendent's assessment of the most appropriate use of audiovisual materials would be reflected in the equipment purchases is supported by the data given in Table 12. The proportion of districts reporting inventory increases varies directly with the superintendent's assessment of the educational value of audiovisual techniques for seven of the nine media.

Perhaps as interesting as this documentation of a tendency to expand a program one believes has merit is the finding that approximately 60 per cent of the least enthusiastic superintendents (those who used audiovisual materials primarily as supplementary teaching aids) increased their inventories of overhead projectors and tape recorders. Both of these devices are more appropriate for direct teaching than for enrichment.

The importance assigned to the administration of the program may be another measure of the "audiovisual mindedness" of a district. If this supposition is correct, there should be more inventory growth among school systems in which the district level coordinator is a member of the central administrative staff than where each school is responsible for its own program. Among systems with district level coordination there should be more interest in the program, and hence greater inventory increases, when the administrator is a trained audiovisual director. Superintendents have many varied and time consuming responsibilities; curriculum supervisors may not have the time or inclination to become well-versed in a variety of audiovisual techniques.

A recent survey by Tanzman and Brown[14] casts doubt on the expectation that the largest inventory gains will take place among

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[14] Jack Tanzman and Robert Brown, "The Cost of Audio-Visual Instruction: 1962-63, 1963-64," School Management, June 1964, pp. 82-94.

TABLE 12

1961 ASSESSMENT OF BEST USE OF AUDIOVISUAL MATERIALS AND INCREASE IN NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR 218 DISTRICTS[a]

Equipment	Per Cent Reporting Increase When Best Use Was:		
	Integral	Integral and Supplementary	Supplementary
(Number of Districts)	(58)	(74)	(86)
16mm projector	63.8	75.7	47.7
Slide-filmstrip projector	69.0	64.9	41.9
Record player	81.0	71.6	62.8
Tape recorder	81.0	77.0	59.3
Opaque projector	55.2	60.8	40.7
Radio	44.8	41.9	33.7
Television set	62.1	51.4	30.2
Overhead projector	79.3	73.0	59.3
Language laboratory (secondary schools only)	42.6	33.3	26.3

[a] Twenty districts did not make a judgment about the best use of audiovisual materials.

districts with audiovisual directors. They found that the amount of money spent for equipment declined when a district had a part-time audiovisual director and was even lower when the district had a full-time director. Tanzman and Brown suggest two possible explanations for this phenomenon--either the audiovisual director is not playing a proper role in the selection and promotion of the use of audiovisual materials, or his district may have acted sooner, made purchases earlier, and may now be just filling in the weak spots.

The relationships between inventory increases and position of the district coordinator, shown in Table 13, indicate that the audiovisual director is fulfilling his role, not only in the promotion of the newer media, but in the use of the standard equipment. Inventory increases for all media, except the opaque projector, were most frequently reported by districts with an audiovisual director. These districts may have acted sooner but they are still acting. In general, the pattern of relationships in the table is in agreement with the hypothesis that inventory increases are most likely when there is centralization and specialization in administration of the audiovisual program.

Plans for Media Use

Each superintendent had been asked to project his plans for use of each of the major audiovisual materials for the two-year period from 1961-1963.[15] To simplify the analysis, the responses were reduced to a "continue present use" vs. "increase use" dichotomy. "Increase use"

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[15] See Question X, 1961 Superintendent's Questionnaire, Appendix B.

TABLE 13

1964 POSITION OF DISTRICT LEVEL AUDIOVISUAL COORDINATOR AND INCREASE IN NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR 214 DISTRICTS[a]

Equipment	Per Cent Reporting Increase When AV Coordinator Was:			
	Audiovisual Director	Other Administrative Personnel	Superintendent	School Personnel
(Number of Districts)	(45)	(60)	(55)	(54)
16 mm projector	77.8	76.7	40.0	48.2
Slide filmstrip projector	73.3	66.7	54.5	35.2
Record player	88.9	76.6	60.0	55.6
Tape recorder	88.9	83.3	61.8	46.3
Opaque projector	55.0	70.0	40.0	37.1
Radio	55.6	51.7	21.8	38.9
Television set	64.4	60.0	27.3	35.2
Overhead projector	91.1	71.7	56.3	50.0
Language laboratory (secondary schools only)	41.5	30.4	25.0	40.0

[a] Twenty-four districts did not give the position of the district level audiovisual coordinator in 1964.

was defined as either "planning to try" or "planning to emphasize" the use of a medium. Respondents who checked "continue present use," "no plan to try" or did not answer the question were considered as desiring to maintain the status quo.

Plans to increase use of the various materials were relatively independent of district size, with two major exceptions: a higher proportion of districts with 12,000 - 25,000 students planned to increase use of all media except filmstrips and radios than was reported for any other district size category; and there was a notable decline in interest in language laboratories when the district had 1,200 or fewer pupils. (See Table A-33.)

Intentions to increase use were also independent of the amount of equipment on hand. About the same proportion of superintendents reported plans to increase use of each medium regardless of whether they had more than the median number of equipment units per school, less than the median, or none at all. (See Table A-27.)

Associations between 1961 plans to increase use of each of the nine media and subsequent increases in amount of equipment per school are shown in Table 14. There is a consistent pattern of a higher percentage of districts reporting equipment increases when they planned to increase use of the attendant materials. For several media, however (e.g., the slide-filmstrip projector, opaque projector, and radio), inventory increase was almost as frequent in systems that did not plan increased use as in those that did. Indeed, more than half of the "status quo" planners increased their inventories of five of the nine items.

TABLE 14

1961 PLANS FOR FUTURE USE AND INCREASE IN NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR 238 DISTRICTS

Equipment	Plan to Increase Use		Plan Status Quo	
	Number	Per Cent Which Increased Inventory	Number	Per Cent Which Increased Inventory
16 mm projector	63	73.0	175	58.3
Slide-filmstrip projector	79	58.2	159	56.0
Record player	85	77.6	153	68.0
Tape recorder	85	80.0	153	65.4
Opaque projector	91	53.8	147	49.7
Radio	30	46.7	208	39.9
Television set	71	56.3	167	40.1
Overhead projector	104	73.1	134	63.4
Language laboratory (secondary schools only)	124	42.7	82	19.5

These findings are rather perplexing. An educator may plan to make more intensive use of equipment he has already without intending to buy any more such items. But why should so many districts increase the relative amount of equipment per school without any apparent prior intentions to increase the use of that equipment? Perhaps the general public interest in the use of technological devices in education and increased federal support for such purchases persuaded a number of these administrators to change their minds.

There should be a more direct relationship between plans and inventory increase among districts which do not have a particular piece of equipment. A superintendent who wishes to employ a new educational technique can be expected to try to persuade his school board to adopt it. Therefore, the relationship between plans for increased use and inventory increase were analyzed separately for those districts which did and did not have the equipment in 1961 for the five items where there were enough cases in each planning and/or inventory status category to justify a more detailed analysis of the data.

Again the results were surprising. As shown in Table 15 districts which had a piece of equipment in 1961 were more likely to increase the relative amount of that equipment, regardless of their plans, for all items except the language laboratory. Although the intention to try the medium was an important predictor of the proportion of adopters for television sets and language laboratories, it made little difference in the acquisition of the overhead projector.

TABLE 15

1961 INVENTORY STATUS AND PLANS FOR FUTURE USE AND INCREASE IN NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR FIVE MEDIA

Equipment	Plan to Increase Use		Plan Status Quo	
	Number	Per Cent Which Increased Inventory	Number	Per Cent Which Increased Inventory
Opaque Projector:				
Had in 1961	75	56.0	127	53.5
Not have in 1961	16	43.8	20	25.0
Radio:				
Had in 1961	25	52.0	136	46.3
Not have in 1961	5	20.0	72	27.8
Television Set:				
Had in 1961	45	62.2	85	55.3
Not have in 1961	26	46.2	82	24.4
Overhead Projector:				
Had in 1961	52	82.7	59	69.5
Not have in 1961	52	63.5	75	58.7
Language Laboratory (secondary schools only):				
Had in 1961	34	26.5	30	20.0
Not have in 1961	90	48.9	52	19.2

It is understandable that there might not be a direct relationship between 1961 plans and adoption for all items of equipment. Such major educational changes as electronic language training and television instruction are likely to be programmed a year or two in advance whereas the decision to purchase an overhead projector or radio requires little revision of one's educational philosophy and can be made more quickly. The relationships between inventory status and equipment increases are not so easily explained. With the exception of the language laboratory, none of the equipment is either prohibitively expensive or limited in its use to any particular grade level or subject area. One receiver or projector is all that is needed for a "have not" district to show an inventory increase, yet these systems did not purchase any of the general purpose items as frequently as districts which already had them. It appears that experience rather than deprivation is the generator of inventory increase.

Inventory Level

The positive association between current ownership of audiovisual equipment and inventory increase supports Finn, Perrin, and Campion's argument that a certain level of technological sophistication is necessary to create the aspiration and impetus for further technological growth.[16] But it does not tell us how high that level should be. Does more experience continue to beget more equipment until the limit of one unit per classroom is reached? Or is there an earlier saturation point, or optimum level, such as one, two, or three items per school? If so, districts which had reached such a level in 1961 might be expected to report little or no inventory increase in 1964. In view of the dynamic state of audiovisual technology and the possibility that standards shift as experience with a medium accumulates, either argument may be supported by the data depending upon the type of equipment investigated.

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[16] James D. Finn, Donald G. Perrin, and Lee E. Campion, Studies in the Growth of Instructional Technology, I: National Education Association, 1962.

Increase in the number of units of equipment per school from 1961 to 1964 was related to the 1961 level of equipment per school by means of regression analysis. Regression lines and equations for each of the nine media are shown in Figures 1 through 4. (The correlation coefficients and standard errors of estimate are given in Table A-28). For three of the media (16 mm projectors, television sets, and overhead projectors) there was a significant positive correlation between 1961 inventory level and inventory increase. For two of the media (opaque projectors and language laboratories) there was a significant negative correlation between 1961 inventory level and inventory increase. For the other four media (tape recorders, record players, radios, and slide-filmstrip projectors) the increase from 1961 to 1964 was quite unrelated to the starting inventory level.

The negative slope of the regression lines for language laboratories and opaque projectors may mean that school administrators have adopted a standard of one installation per appropriate school building for each of these items. The positive association between inventory level and increase for television sets and overhead projectors may mean that experience with this equipment creates a demand for more. Using the regression equations to illustrate the point, whereas superintendents

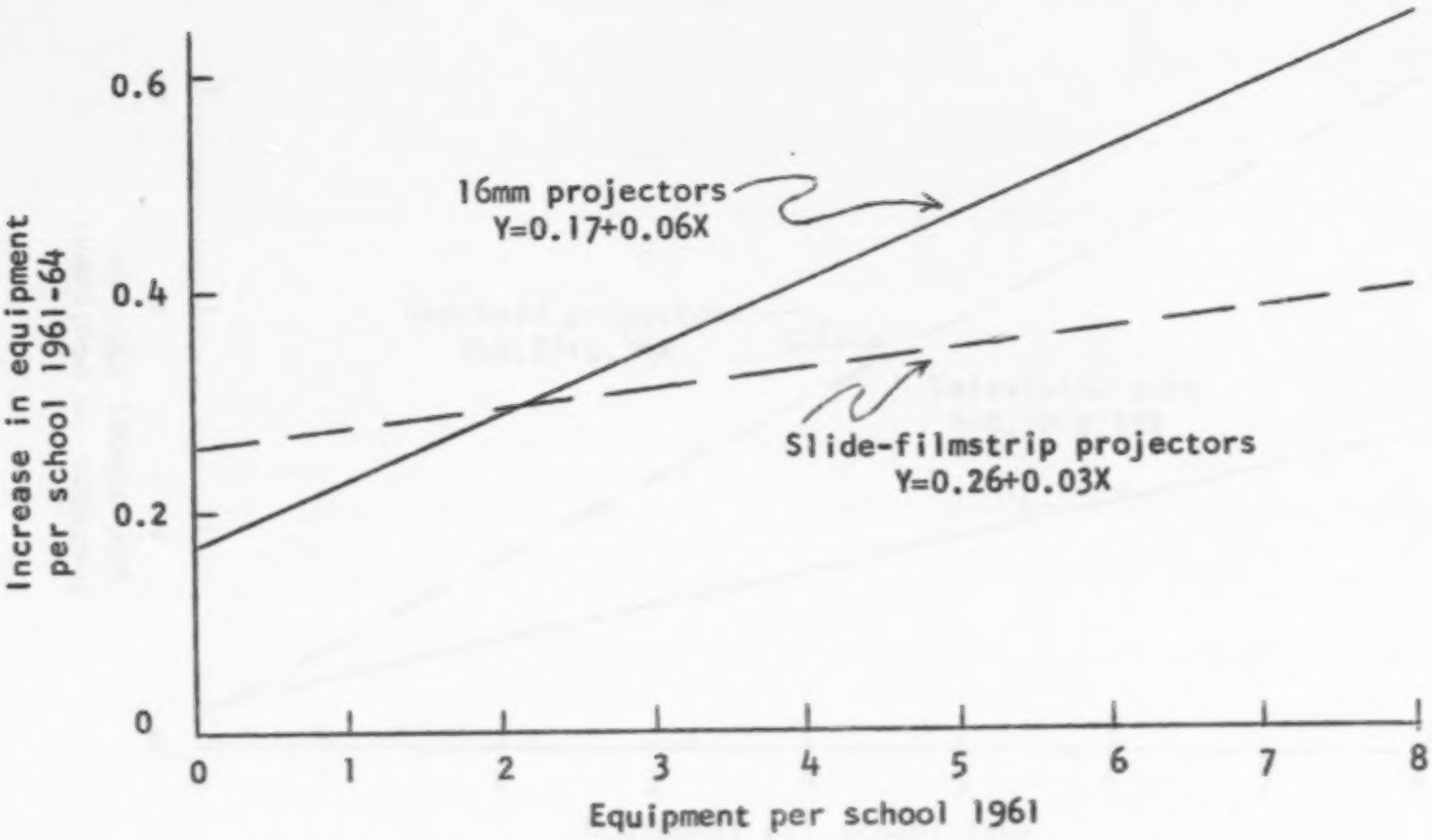

Figure 1.--Relation between 1961 inventory level and inventory increase 1961-1964 for 16 mm projectors and slide-filmstrip projectors.

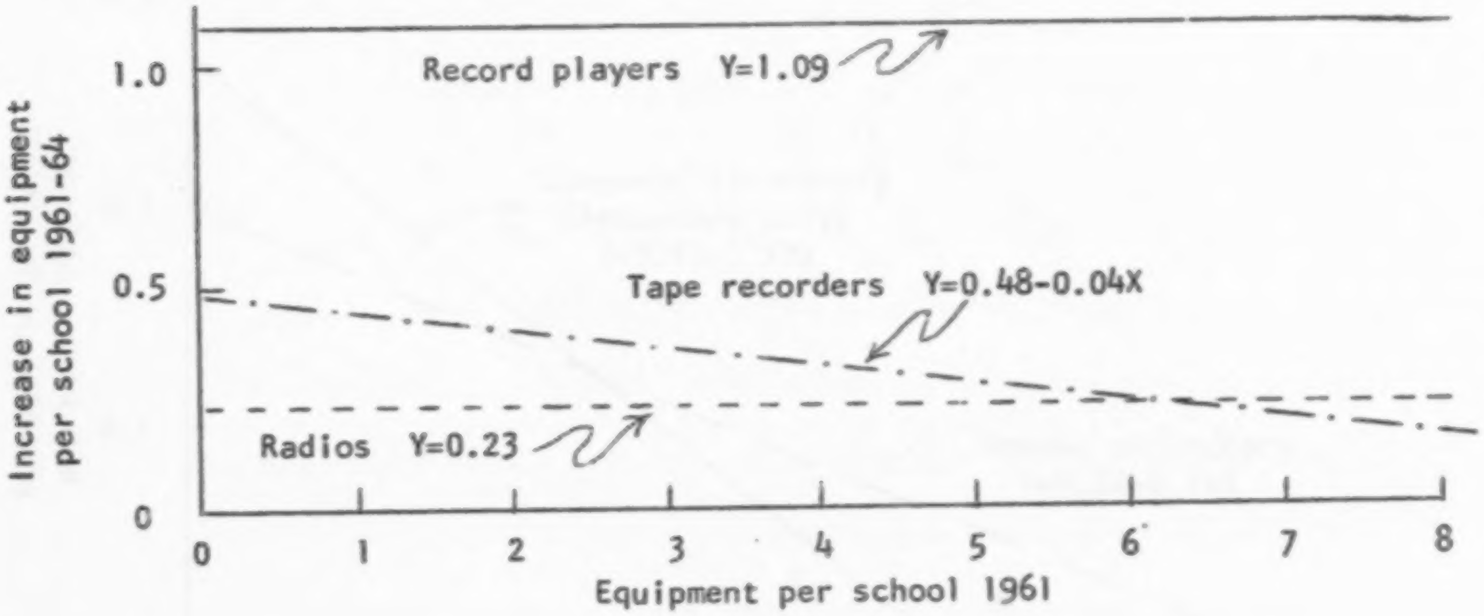

Figure 2.--Relation between 1961 inventory level and inventory increase 1961-1964 for record players, tape recorders and radios.

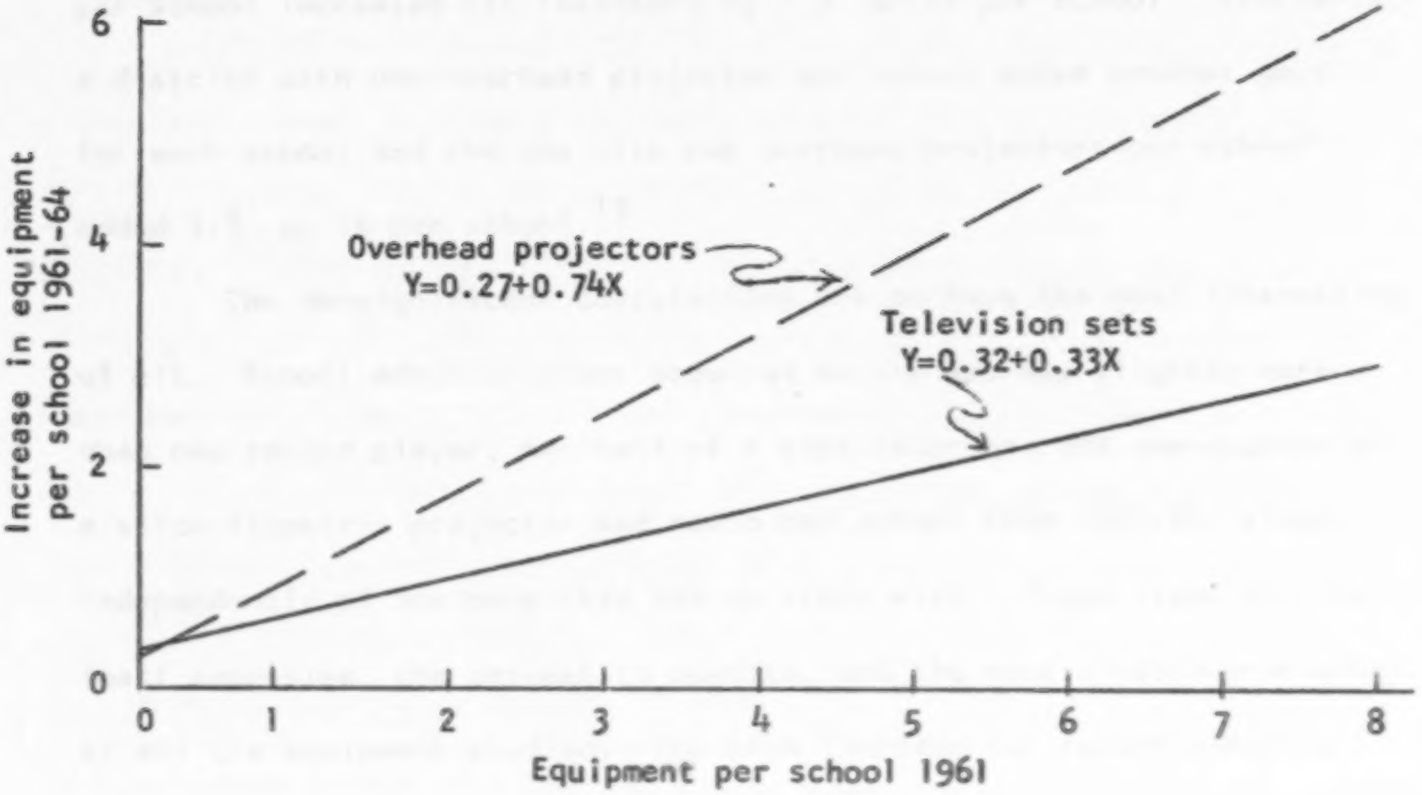

Figure 3.--Relation between 1961 inventory level and inventory increase 1961-1964 for overhead projectors and television sets.

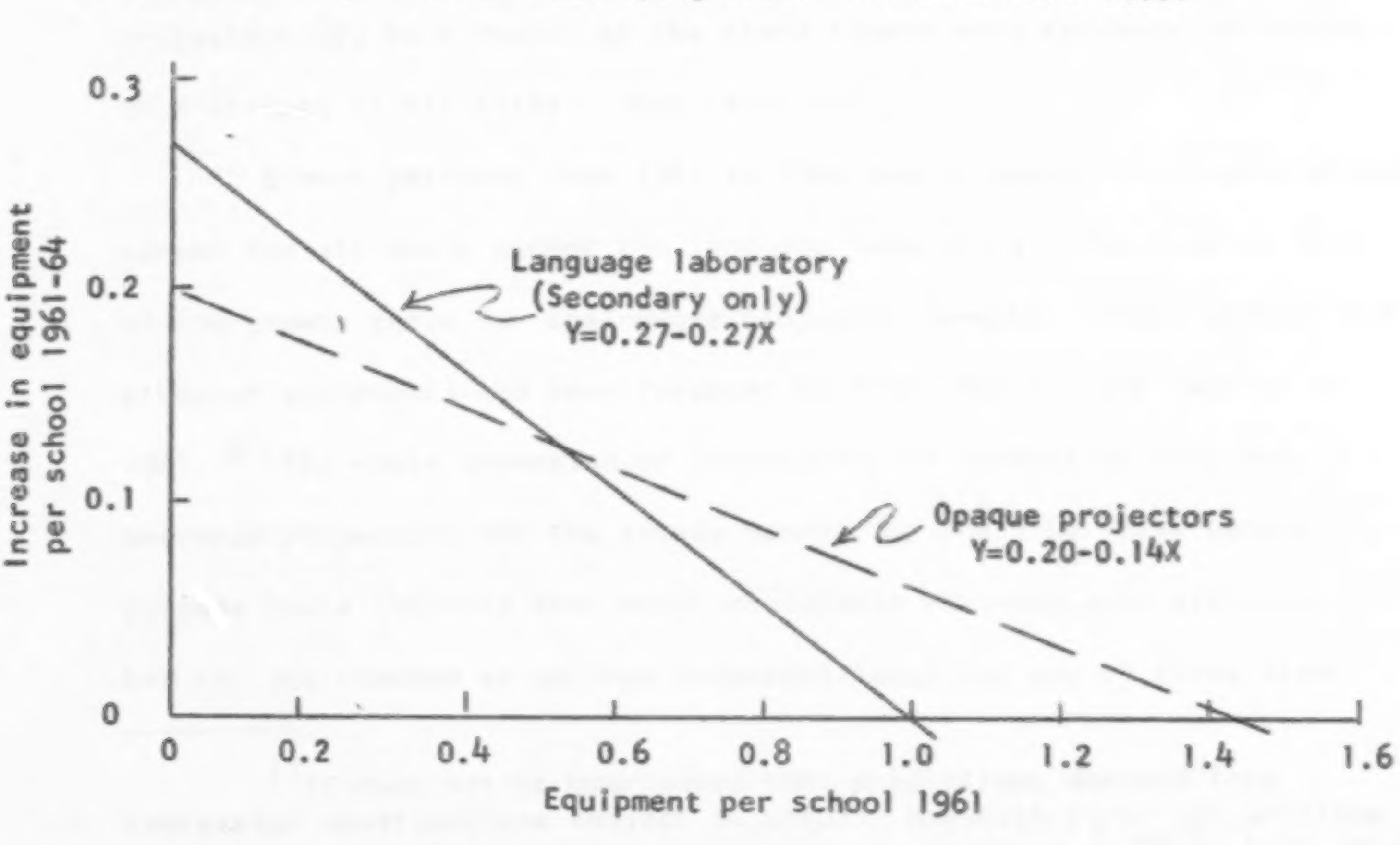

Figure 4.--Relation between 1961 inventory level and inventory increase 1961-1964 for language laboratories (secondary only) and opaque projectors.

who had one television set per school in 1961 added on the average .6 of a unit per school, a typical superintendent with three television sets per school increased his inventory by 1.3 units per school. Similarly, a district with one overhead projector per school added another unit for each school and the one with two overhead projectors per school added 1.8 units per school.[17]

The nonsignificant correlations are perhaps the most interesting of all. School administrators acquired on the average slightly more than one record player, one-half of a tape recorder, and one-quarter of a slide-filmstrip projector and radio per school from 1961-64, almost independently of how many they had to start with. These items are the least expensive, the easiest to operate, and the most classroom-oriented of all the equipment studied. The high increase for record players, regardless of previous inventory levels, and the lower, but equally independent increase for radios, tape recorders, and slide-filmstrip projectors may be a result of the trend toward more teachers per school in districts of all sizes. (See Table A-6.)

Growth patterns from 1961 to 1964 are an extension of past growth curves for all media except the language laboratory. The slowing down of the growth curve for the opaque projector (another rather specialized piece of equipment) had been foreseen by Finn, Perrin, and Campion in 1961.[18] The rapid expansion of inventories of television sets and overhead projectors and the steady demand for the other five general purpose media indicate that even reasonably well-equipped districts had not yet reached an optimum inventory level for any of these items.

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[17] It must not be overlooked that predictions derived from regression equations are subject to error. How much error was involved in each measure, for each type of equipment, is shown in Table A-28 which the reader is urged to consult in this context.

[18] *Op. cit.*, pp. 67-72.

V. APPLICABILITY OF THE NEWER MEDIA

Advocates of educational innovation need to study not only social and psychological factors which facilitate or inhibit change but the channels of information and pressure which are given credence by target systems. Knowledge of the reasons administrators are most likely to give in support of their adoption or nonadoption of a new technique can increase the effectiveness of the strategies employed by the change agent.[19]

Five audiovisual techniques introduced into public education essentially since 1950 were included in this survey: instructional television,[20] overhead projectors, language laboratories, programmed texts, and teaching machines. As shown in Table 16, the survey period was a time of rapid growth in classroom use of these media. By 1964 the slowest diffusing innovation (the teaching machine) was used by 19 per cent of the sample districts and the most widely diffused innovation (the overhead projector) was used by 79 per cent. The majority of the adopters seem to be satisfied with the classroom utility of the new techniques. Reports of discontinued use were few and confined mainly to instructional television. Reports of experimental use represented an important proportion of the adoptions only for programmed materials.

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[19] For several provocative discussions of strategies employed in educational change see: Henry M. Brickell, Organizing New York State for Educational Change, New York State Education Department, Albany, December 1961; Matthew B. Miles (editor), Innovation in Education, Columbia University, New York, 1964; W. C. Meierhenry (editor), Media and Educational Innovation, The University of Nebraska, Lincoln, 1964; and papers for the Ohio State University Conference on Strategies for Educational Change, November 1965.

[20] Defined as a regular program of classroom instruction in which a complete course or integral part of a course is presented via television. The number of districts offering such instruction in both 1961 and 1964 is considerably smaller than the number of districts which owned one or more television sets in either year.

TABLE 16

CLASSROOM USE OF FIVE NEWER MEDIA 1961-1964 FOR 238 DISTRICTS

Media	Per Cent of Districts Reporting:				
	Used Since 1961	In Use by 1964	Experimental Use in 1964	Discontinued Use by 1964[b]	No Use by 1964
Television instruction[a]	18.5	16.4	4.6	3.8	56.7
Overhead projector	46.6	32.4	-	-	21.0
Language Laboratory	27.3	23.9	0.4	0.4	48.0
Programmed text	0.4	17.6	14.3	1.3	66.4
Teaching machine	1.3	12.6	5.5	-	80.6

[a] Defined as a regular program of instruction in which a complete course or integral part of a course is presented via television. The number of districts offering such instruction in both 1961 and 1964 is considerably smaller than the number of districts which owned one or more television sets in either year.

[b] Districts which had discontinued use of a medium were considered as nonadopters in all analyses of reasons for adoption or nonadoption of the various techniques.

Taking Brickell's 1961 study of the process of educational change in New York State[21] as a starting point, a checklist of twelve factors which might influence an administrator to adopt a new educational technique was included in the survey questionnaire. A similar list of 16 factors which might discourage use of the new techniques was developed from the problems cited as deterrents to effective use of audiovisual materials in the 1961 and 1962 Bureau of Social Science Research surveys. Each respondent was asked first to check whether or not his district had adopted any of the five media in question and then to select the three factors from the appropriate list which had been most influential in his decision either to encourage or not to encourage the use of a specific technique.

The two check lists are somewhat different in orientation and emphasis. (See Questions 9 and 10, Follow-up Questionnaire, Appendix B, for the list of factors and directions used.) Assuming that anyone who has adopted a technique believes that the medium itself has merit, the "pro" statements are concerned with "how" the educator became convinced of its value, not "why." The question became: Which avenue of knowledge was most efficacious--direct personal experience through use or observation; indirect personal experience through articles, reports, and speeches; or compliance with the requests of other interested parties within the school system? On the other hand, a nonadopter may be convinced of the value of a technique but be unable to introduce it into his school system because of monetary or administrative problems. Therefore, the list of factors which might discourage innovation covered several dimensions: inadequacies of the medium itself; inapplicability of the technique to

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[21] Brickell, op. cit.

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"my" situation; lack of available money; or administrative difficulties encountered in trying to use the medium.

The objective of this section of the report is to ascertain which of the suggested reasons were most likely to be used to justify various administrative decisions. Do certain positive or negative factors consistently stand out as influential in the decision-making process regardless of the medium, or are there media-related differences in the pattern of responses? As a medium becomes more widely accepted, do reasons cited for its adoption change? Does a respondent in a system which was unable to carry out plans for introducing a new technique explain that nonadoption in a different manner than a respondent representing a system which had made no plans to adopt the new technique?

Reasons for Adoption of the Newer Media

Several points can be made from the frequency with which each adoption factor is cited in Table 17. There are no standard or typical channels of influence leading to the adoption of the newer media or of any particular medium. In fact, the most consistent findings are that school boards and parents have very little impact upon decisions to introduce any of the media. In general, requests from teachers, demonstrations, and observations of operating programs are more effective than technical reports and papers at professional meetings.

Brickell's respondents emphasized the persuasive value of direct observation of a program in action. For our respondents, observation was critical for instructional television or language laboratories, but other factors were more important for the remaining three media. Teacher requests were first or second in importance for all media except television

TABLE 17

REASONS FOR ADOPTION OF FIVE NEWER MEDIA FOR DISTRICTS WHICH USED MEDIUM IN 1964

	Per Cent Citing Reason as Factor in Adoption				
Reasons for Adoption	Television Instruction	Overhead Projector	Language, Laboratory	Programmed Text	Teaching Machine
(Number of districts with medium)	(94)	(188)	(123)	(77)	(46)
Personal experience with technique	27.6	41.5	15.4	24.7	15.2
Observation of program in action	50.0	30.9	48.0	24.7	23.9
Talk with neighboring superintendents	11.7	5.3	12.2	6.5	10.9
Demonstrations at professional meetings	39.4	59.6	28.4	35.1	52.2
Demonstrations by manufacturer	3.2	38.3	20.3	23.4	39.1
Articles in professional journals	28.7	25.0	40.6	44.2	32.6
Technical or research reports	24.5	7.4	30.1	29.9	10.9
Speeches at professional meetings	21.3	11.2	13.8	18.2	21.7
Requests from teachers	28.7	44.1	48.8	41.6	26.1
Requests from administrators	21.3	12.8	21.1	20.8	10.9
Requests from school board	6.4	2.7	6.5	-	-
Requests from parents	2.1	1.6	2.4	1.3	-
No reasons given	4.3	3.7	0.8	3.9	13.0

and teaching machines. Demonstrations at professional meetings were the most important source of knowledge about overhead projectors and teaching machines and the second source for television instruction. Articles in professional journals were the most frequently cited factor leading to the adoption of programmed texts and the third most effective channel of information about the merits of television instruction and language laboratories. Demonstrations by the manufacturer encouraged the use of teaching machines; personal experience contributed significantly to the adoption of the overhead projector.

Critical factors in the decision to adopt a technique were surprisingly similar across district size despite a higher frequency of adoption in the larger districts. (See Table A-29.) Observation of a program in action was consistently in first place for instructional television as were demonstrations for the overhead. Direct observation and teacher requests were similarly rated by all groups as the two major factors for language laboratories. There was some indication that administrators in larger districts, particularly those with 12,000 - 24,999 pupils, put more stress on research reports about programmed learning than did their colleagues in small systems. However, the small number of adopters in any size category makes this apparent difference a tenuous one.

Time of Adoption

Cultural diffusion is presumed to radiate outward from the most cosmopolitan centers, or persons, to the more deliberate and traditional. Innovators, and to a lesser degree, early adopters derive their ideas from sources external to their immediate environment. Later adopters are more influenced by the success or failure of their peers in using a new technique.[22] If these propositions are true, they should be reflected in a differential emphasis on various channels of information among early and later adopters within this sample of school districts. A district which was using a technique in 1961 was considered an early adopter whereas a district which had introduced a technique after 1961 was considered a later adopter.[23] A comparison between the two groups was made for three of the newer media--instructional television, the overhead projector, and the language laboratory. Programmed texts and teaching machines were excluded from the analysis as only three respondents reported the use of either form of programmed learning in 1961.

Applying the propositions of general diffusion theory to the school situation we would expect that early adopters would put relatively more emphasis on technical reports and direct personal experience and that later adopters would put relatively more credence in their neighbors' experience and their teachers' judgments. The data shown in Table 18 only partially support such a conclusion. Personal experience with the technique was characteristic of early adopters of the overhead, but of later adopters of instructional television, and characteristic of neither group for language laboratories. Although early adopters are somewhat more cognizant of journal articles about language laboratories and instructional television, there is no difference between the two groups for any of the three media in the amount of importance they attribute to technical reports or speeches at professional meetings. Experience in

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[22] Cf. Everett M. Rogers. Diffusion of Innovations. New York: The Free Press of Glencoe, 1962, esp. pp. 300-316.

[23] Unfortunately the true "innovators" could not be identified.

TABLE 18

TIME OF ADOPTION AND REASONS FOR ADOPTION OF THREE NEWER MEDIA[a]

Reasons for Adoption	Per Cent of Districts Reporting Reason					
	Television Instruction		Overhead Projector		Language Laboratory	
	Used in 1961	Adopted by 1964	Used in 1961	Adopted by 1964	Used in 1961	Adopted by 1964
(Number of districts)	(44)	(50)	(111)	(77)	(65)	(58)
Personal experience with technique	20.4	34.0	46.8	33.3	15.4	15.5
Observation of program in action	50.0	50.0	29.7	32.5	53.8	41.4
Talk with neighboring superintendents	13.6	10.0	2.7	9.1	7.7	17.2
Demonstrations at professional meetings	29.5	48.0	47.7	64.9	26.2	31.0
Demonstrations by manufacturer	6.8	-	38.7	37.6	13.8	27.6
Articles in professional journals	31.8	26.0	25.2	24.7	46.2	34.5
Technical or research reports	25.0	24.0	8.1	6.5	29.2	31.0
Speeches at professional meetings	20.4	22.0	9.9	13.0	12.3	15.5
Requests from teachers	20.4	36.0	45.0	42.9	46.2	51.7
Requests from administrators	27.3	16.0	12.6	13.0	21.5	20.7
Requests from school board	9.1	4.0	2.7	4.0	7.7	5.2
Requests from parents	4.5	-	1.8	1.3	3.1	1.7
No reasons given	4.5	4.0	3.6	2.6	1.5	-

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[a] Programmed texts and teaching machines are excluded from this analysis as only three districts reported the use of teaching machines in 1961 and only one the use of programmed texts.

neighboring districts assumes somewhat more importance for later adopters of overhead projectors and language laboratories, but is not a major factor in the adoption decision for either group. Administrative requests figured more prominently than teacher requests in the early adoption of instructional television, but teacher requests were cited with almost equal frequency as a major factor in adoption by both groups for the other two media.

These findings suggest that a multifaceted approach is most effective in producing change. Personal experience, demonstrations, professional journals, and faculty requests are all important sources of information about new instructional techniques. Observation of a functioning program in an actual school setting may well be a critical factor in the adoption of large, complex, and expensive systems of instruction, such as complete courses on television or teaching language in an electronic laboratory. However, demonstrations of what less comprehensive and less expensive media can do, either at a professional meeting or in one's own school, may be an effective substitute, particularly for the later adopters. Moreover, each form of demonstration can be buttressed by the dissemination of information about the new medium through the administrator's professional journals. This latter source of knowledge may be especially useful in acquainting the administrator with the characteristics of the more technically complicated innovations (e.g., the language laboratory) or those which entail a radical change in classroom pedagogy (e.g., programmed instruction). Although new programs have been successfully introduced despite initial teacher apathy, or even opposition, faculty interest was a major reason for adoption of the media which experienced the most rapid diffusion over the three year survey period--the overhead projector, the programmed text, and the language laboratory.

Reasons for Nonadoption of the Newer Media

Skepticism about the usefulness of one or more of the new media or the ability of the classroom teacher to employ them effectively appear to be more important deterrents to adoption than lack of money or administrative problems. As shown in Table 19, questions about the value of a technique per se or its instructional value in relation to its cost were major obstacles to introduction of each of the five media. Lack of enough teachers trained to use the technique effectively was a frequent justification for nonadoption of four of the five media.[24] Again, general community opinion, as represented by the school board, was not an important factor in shaping the superintendent's decision to try a new technique.

A "wait and see" attitude was characteristic of nonadopters for both forms of programmed learning. The responding administrator, and to a lesser extent the teacher, wanted more evidence of the value of this instructional approach. Doubts about whether the results achieved justified the expense were reported most frequently for the more complex and expensive innovations (the language laboratory, instructional television, and the teaching machine). Failure to introduce the overhead projector

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[24] One wonders if there is a presumption that the classroom teacher is less actively involved with television instruction. Although the data do not warrant developing the point further in this context, the conception of each of the new media as an active or passive teaching device vis-à-vis the classroom teacher is worth more systematic study.

TABLE 19

REASONS FOR NONADOPTION OF FIVE NEWER MEDIA FOR DISTRICTS WITHOUT MEDIUM IN 1964

Reasons for Nonadoption	Per Cent Citing Reason As Factor in Nonadoption				
	Television Instruction	Overhead Projector	Language Laboratory	Programmed Text	Teaching Machine
(Number of districts without medium)	(144)	(50)	(115)	(161)	(192)
Building program takes priority	14.6	24.0	19.1	9.3	9.4
Salary raises take priority	13.2	34.0	21.7	10.6	10.9
Use requires extensive classroom remodeling	9.7	6.0	25.2	1.2	2.1
System too small to justify use	24.3	14.0	19.1	13.0	12.5
General lack of money	6.2	12.0	5.2	1.9	2.1
Materials available do not fit curriculum well	10.4	6.0	5.2	8.7	7.3
Preparation of materials takes too much of teachers' time	0.7	14.0	6.1	2.5	4.7
Too few teachers trained to use technique	20.8	34.0	35.7	41.6	32.8
Too difficult to schedule use of equipment	11.8	6.0	3.5	1.9	2.1
Technique too expensive for results achieved	34.0	22.0	38.3	22.4	33.9
Too few materials available to use with medium	16.7	6.0	2.6	16.8	18.2
Alternative teaching methods just as good or better	11.8	20.0	10.4	28.6	30.7
Need more evidence of value of technique	31.9	18.0	24.3	59.6	56.2
Teachers not convinced of value	11.1	18.0	14.5	31.7	25.5
School board not convinced of value	10.4	10.0	9.6	7.4	6.8
Parents not convinced of value	0.7	-	-	-	0.5
Use in neighboring districts has not been too successful	4.9	4.0	2.6	2.5	2.1
No reasons given	8.3	-	9.6	4.3	6.2

was more frequently attributed to a shortage of money than it was to any presumed inadequacy of the medium itself. This item apparently is most vulnerable when economies must be made to provide for salary raises or new buildings.

There was little variation in the significance attached to each of the nonadoption factors by district size except for the fact that administrators in six of the seventeen very small districts (with 150-300 pupils) considered their systems as too small to profit from the adoption of any of the five media.

A desire to see more evidence of the value of a new approach, particularly one which may require a reorientation of one's educational philosophy, is understandable and to be expected. The survey data underline the need for continuing justification of the efficacy of the newer media. The consistent complaint that too few teachers are trained to use the new techniques also has important implications for the promoter of educational change. Teachers may acquire the requisite skills in college, but where will the practicing teacher learn the necessary competencies? Many of the smaller school systems are not equipped to train their own faculties. Can enough teachers be induced to attend intensive summer workshops or media institutes to speed the process of diffusion?

Plans Status and Reasons for Adoption or Nonadoption

It is clear from Table 20 that many districts did not carry out their 1961 plans. Approximately 60 per cent of the systems introduced overhead projectors regardless of earlier plans. Teaching machines had not found wide acceptance whatever the initial intention. Although plans

TABLE 20

1961 PLANS FOR INTRODUCTION OF FIVE NEWER MEDIA AND ADOPTION OF EACH MEDIUM BY 1964 FOR DISTRICTS WHICH DID NOT HAVE THE MEDIUM IN 1961

Media	Number Without Medium in 1961	Planned to Introduce 1961-1964		No Plan to Introduce 1961-1964	
		Number	Per Cent Who Adopted	Number	Per Cent Who Adopted
Television instruction	194	56	42.9	138	18.8
Overhead projector	127	52	65.4	75	57.3
Language laboratory	172	97	47.4	75	16.0
Programmed text	237	81[a]	45.7	156	25.0
Teaching machine	235	81[a]	22.2	154	16.2

[a] The 1961 questionnaire asked only for plans for teaching machines; the assumption was made that intentions at that time covered both forms of programmed learning.

were directly related to adoption of television instruction, language laboratories, and programmed texts, a sizeable number of districts acted contrary to their 1961 expectations with regard to these three media.

Lack of perfect correspondence between plans and introduction of a new technique allowed us to investigate whether districts which did not realize their original intentions were influenced by different factors than those who fulfilled their 1961 goals. Relationships between plans and reasons for adoption are given in Table 21; relationships between plans and reasons for nonadoption are given in Table 22.

Why did some potential nonadopters change their plans and introduce one or more of the newer media? Although both groups relied heavily on observation of an actual or simulated program for information about a medium, the "mind changers" were more frequently influenced by requests from teachers or administrative personnel than were the "plans realizers." The substitution of the opinions of others for one's own experience was particularly important for instructional television, overhead projectors, and programmed texts.

There were surprisingly few differences between the two planning groups in the importance attached to various nonadoption factors. The need to put money into new schools rather than television equipment or language laboratories kept some districts from realizing adoption plans. Others changed their plans because there were too few good materials available for use with the desired medium. Scheduling problems discouraged a portion of the planned adoption of instructional television.

TABLE 21

1961 PLANS AND REASONS FOR ADOPTION OF FIVE NEWER MEDIA

Reasons for Adoption	Per Cent Citing Reason as Factor in Adoption									
	Television Instruction		Overhead Projector		Language Laboratory		Programmed Text		Teaching Machine	
	Planned	Not Planned	Planned	Not Planned	Planned	Not Planned	Planned	Not Planned	Planned	Not Planned
(Number of districts)	(24)	(26)	(34)	(43)	(46)	(12)	(37)	(40)	(18)	(28)
Personal experience with technique	41.7	26.9	44.1	25.6	17.4	8.3	37.8	12.5	16.7	14.3
Observation of program in action	50.0	50.0	35.3	30.2	46.6	25.0	21.6	27.5	5.6	35.7
Talk with neighboring superintendents	20.8	-	8.8	9.3	15.2	25.0	2.7	10.0	5.6	14.3
Demonstrations at professional meetings	41.7	53.9	70.6	60.5	30.4	33.3	35.1	35.0	44.5	57.2
Demonstrations by manufacturer	-	-	41.2	34.9	23.9	41.7	24.3	22.5	44.5	35.7
Articles in professional journals	33.3	19.2	26.5	23.2	34.8	33.3	43.2	45.0	38.9	28.6
Technical or research reports	25.0	23.1	2.9	9.3	32.6	25.0	32.4	27.5	16.7	7.1
Speeches at professional meetings	20.8	23.1	17.6	9.3	13.0	25.0	18.9	17.5	38.9	10.7
Requests from teachers	33.3	38.5	32.4	51.2	51.2	50.0	40.5	42.5	22.2	28.6
Requests from administrators	8.3	23.1	8.8	16.3	19.6	25.0	10.8	30.0	-	17.9
Requests from school board	8.3	-	-	4.6	6.5	-	-	-	-	-
Requests from parents	-	-	-	2.3	2.2	-	2.7	-	-	-
No reasons given	-	7.7	-	2.3	-	-	5.4	2.5	16.7	10.7

TABLE 22

1961 PLANS AND MAJOR REASONS FOR NONADOPTION OF FIVE NEWER MEDIA

Reasons for Nonadoption	Per Cent Citing Reason as Factor in Nonadoption									
	Television Instruction		Overhead Projector		Language Laboratory		Programmed Text		Teaching Machine	
	Planned[a]	Not Planned	Planned[a]	Not Planned	Planned[a]	Not Planned	Planned[a]	Not Planned	Planned[a]	Not Planned
(Number of districts)	(32)	(112)	(18)	(32)	(51)	(64)	(44)	(117)	(63)	(129)
Building program takes priority	25.0	11.6	22.2	25.0	27.4	12.5	13.6	7.7	6.4	10.9
Salary raises take priority	18.8	11.6	27.8	37.5	17.7	25.0	6.8	12.0	3.2	14.7
Use requires extensive classroom remodeling	12.5	8.9	5.5	6.2	25.5	25.0	2.3	0.9	1.6	2.3
System too small to justify use	12.5	27.7	11.1	15.6	7.8	28.1	11.4	13.7	9.5	14.0
Too few teachers trained to use technique	18.8	21.4	27.8	37.5	33.3	37.5	45.5	40.2	27.0	35.7
Too difficult to schedule use of equipment	21.9	8.9	5.5	6.2	3.9	3.1	4.5	0.9	3.2	1.6
Technique too expensive for results achieved	31.2	34.8	27.8	18.8	27.4	46.8	20.5	23.1	44.5	28.7
Too few materials to use with medium	21.9	15.2	11.1	3.1	2.0	3.1	18.2	16.2	27.0	14.0
Alternative teaching methods just as good	9.4	12.5	27.8	15.6	9.8	0.9	31.8	27.4	34.9	28.7
Need more evidence of value of technique	21.9	34.8	16.7	18.8	27.4	21.8	63.6	58.1	61.9	53.5
Teachers not convinced of value	9.4	11.6	11.1	21.9	21.6	9.4	31.8	31.6	25.4	25.6
School board not convinced of value	9.4	10.7	11.1	9.4	9.8	9.4	2.3	9.4	4.8	7.8
No reasons given	6.2	8.9	-	-	13.7	6.2	-	6.0	4.8	7.0

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[a] The "Planned" group are those who had intended to introduce the medium but did not do so.

However, both planning groups stressed essentially the same reasons for nonadoption of a new medium: they wanted more evidence of its value; it was too expensive for the results achieved; alternative methods were as good; or few teachers were trained to use the technique. Questions about the utility of a medium dulled an original enthusiasm as well as reinforced a preexisting doubt. These data suggest that promoters of educational change must continue to demonstrate the efficacy of proposed innovations to their friends as well as to their critics.

Criteria of Effective Use

It seems axiomatic to conclude from the previous discussion that if promoters of educational change can provide "evidence" of the value of a new instructional technique, they can overcome a fair share of the opposition to that change. But what will the school administrator accept as convincing evidence of values? Each respondent was asked, "What criteria do you use for evaluating the effectiveness of the use of audiovisual media in your district? Four major criteria were cited:

1. subjective reactions of teachers, students, and/or supervisors (reported by 65% of the districts);

2. observation of classroom use, often coupled with measurement of student achievement by a general testing program (reported by 51% of the districts). Only two or three districts used control groups to test the value of audiovisual instruction.

3. teacher requests for materials and observations of the frequency, discrimination, and skill with which teachers used available materials (mentioned by 26% of the districts); and

4. a nonspecific concern about how well audiovisual materials relate to or improve the curriculum (mentioned by 16 per cent of the districts).

The emphasis on subjective reactions and observation supports Brickell's conclusion that local school systems cannot be exprected to generate anything more than observational evidence of the value of their educational practices. Reliance on general achievement tests for some kind of objective measurement of the teaching power of audiovisual techniques is evidence for his argument that appropriate evaluative measures are not developed simultaneously with the invention of new instructional programs.[25] One respondent spoke well for the whole group when he wrote, "the district has no objective criteria developed at this time; subjective judgment is the best we have come up with to date." Subjective judgments might be supplemented by direct observation or achievement test scores (in 35 per cent of the cases), by teacher "demand" (in 13 per cent of the cases) or stand alone (in 17 per cent of the cases), but they were a major criterion measure for 50 per cent or more of the districts in all size categories and under all types of audiovisual coordination. (See Tables A-30 and A-31.)

Perhaps the most interesting difference in the relative emphasis placed on each type of evaluative criterion is that found between the 29 districts which had adopted all five of the newer media and the 26 districts which did not use any of them. Eighty-six per cent of the former as against 54 per cent of the latter reported the use of staff and student reactions. Conversely, 62 per cent of the nonadopters and only 48 per cent of the adopters reported the use of classroom observation and test results. Reliance on test results, which usually show little or no difference attributable to the new procedure, would seem to be a valid deterrent to expensive innovations. However, such inconclusive results are available to both adopters and nonadopters. One wonders what the differential emphasis on "subjective" and "objective" evidence between the two groups may mean. It seems that discouraging test results do not dampen the desire of the adopters to try new techniques. Would positive test results convince the nonadopters? Or is there a more fundamental response set toward or against change per se which preconditions the type of evidence used to justify one's decision?

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[25] Cf. Brickell, op. cit., pp. 33-34.

Areas of Most Effective Use of the Newer Media

New techniques may be adopted because they do many things well or because they fulfill a specific need. In 1961, the basic audiovisual tools were the film, the filmstrip, the record, and the tape. Films and filmstrips were used most frequently in science and social studies; records and tapes were used predominantly in language, English, and music. All four media were used more often by elementary teachers than by secondary teachers; none of the four were used to any great extent in teaching mathematics. Frequency of use does not necessarily imply excellence of use. However, the two are often highly correlated--particularly if the judgments of effectiveness are based largely upon teacher evaluations and demand.

One purpose of this study was to compare superintendents' judgments of the areas of effective use for both the old and the new media. Each respondent was asked to report the grade levels and subjects in which the teachers in his district had been able to use each of the available audiovisual tools effectively. As shown in Tables 23 and 24, administrative opinions of the curriculum areas in which there was most effective use of the four standard media agreed quite closely with the relative frequency of use of each medium in the various subject categories for both elementary and secondary education. If a superintendent did not report effective use of films and filmstrips in all subjects, he would likely report that his teachers used these materials most skillfully in science and/or social studies. Similarly, records were considered as most appropriately used for music (particularly in the elementary schools) or for English.

There is one interesting and significant lack of association between frequency of use and reports of effective use. In 1962, 60 per cent of the English teachers in these districts used records whereas only 20 per cent used tapes. Foreign language teachers reported almost equal use of both materials; 67 per cent used records, 68 per cent used tapes. Nevertheless, the superintendents reported a higher incidence of effective use of tapes by both subject matter specialists in 1964. It seems unrealistic to assume that these teachers had discontinued the use of records by 1964, especially in view of the fact that 71 per cent of the districts had increased their inventories of record players, with a median increase of 1.10 units per school. It seems more logical to assume that the administrator was indeed more often impressed by the manner in which instructional tapes were employed. The variety of ways in which tapes could be used had of course been expanded by the advent of the language laboratory, which had the most specific focus of effective use for any of the eleven media--foreign language training in the secondary schools.

TABLE 23

SUBJECT LOCATION OF MOST EFFECTIVE USE OF ELEVEN AUDIOVISUAL MEDIA IN ELEMENTARY EDUCATION

Media	Number of Districts with Medium	Per Cent Reporting Effective Use by Elementary Teachers in:								
		Science	Mathematics	Social Studies	English	Fine Arts	Foreign Language	Applied Arts	All Subjects	No Effective Use
16mm films	232[a]	26.8	3.6	28.5	4.8	0.5	-	4.3	43.2	2.6
Filmstrips	232	29.2	12.3	26.4	15.4	0.4	1.7	4.4	48.5	3.4
Records	232	2.2	0.9	8.6	20.7	49.2	10.4	11.7	26.3	4.3
Tapes	227	0.9	0.9	7.1	32.3	15.5	16.0	2.2	12.8	6.2
Opaque projector	208	15.2	5.2	22.2	11.0	6.6	0.4	2.4	31.0	9.6
Radio	178	4.5	-	15.2	4.5	10.2	-	0.6	30.4	33.2
Television instruction	93	46.3	19.3	31.2	4.4	13.9	27.7	4.4	20.5	3.3
Overhead projector	187	19.2	14.0	4.7	4.7	1.6	1.0	3.2	14.4	8.0
Language laboratory	118	-	-	-	2.6	-	7.7	0.9	-	2.5
Programmed text	75	9.1	36.0	3.9	18.6	-	-	2.6	5.3	4.0
Teaching machine	44	4.5	25.0	-	45.3	-	-	4.5	16.0	11.4

[a] The six districts with secondary schools only were excluded from this analysis.

TABLE 24

SUBJECT LOCATION OF MOST EFFECTIVE USE OF ELEVEN AUDIOVISUAL MEDIA IN SECONDARY EDUCATION

Media	Number of Districts With Medium	Per Cent Reporting Effective Use By Secondary Teachers in:								
		Science	Mathematics	Social Studies	English	Fine Arts	Foreign Language	Applied Arts	All Subjects	No Effective Use
16mm films	206[a]	31.6	2.1	37.9	6.5	2.1	-	8.8	46.6	2.4
Filmstrips	206	20.8	7.1	21.2	8.6	0.4	0.8	5.1	42.1	2.9
Records	206	0.5	0.5	10.2	33.1	31.6	14.6	11.2	21.4	3.9
Tapes	204	0.5	0.5	10.4	50.4	21.2	35.7	5.9	12.2	5.9
Opaque projector	191	25.6	9.5	20.4	8.3	5.7	0.5	5.7	28.7	8.4
Radio	155	-	-	22.6	1.3	3.2	-	-	34.2	30.3
Television instruction	80	16.0	3.6	15.2	4.9	1.2	3.6	1.2	10.0	3.8
Overhead projector	167	48.5	25.8	8.4	8.2	2.4	1.2	13.7	26.9	7.2
Language laboratory	118	-	-	-	10.2	-	87.3	1.8	-	2.5
Programmed text	60	6.7	43.3	-	18.2	-	-	1.6	8.3	5.0
Teaching machine	39	5.1	10.2	-	25.6	-	-	-	7.7	12.8

[a] The 32 elementary districts were excluded from this analysis.

The other newer media were more grade-specific than subject oriented. Television instruction was judged as most effective for elementary science, social studies, and foreign language. The overhead projector was primarily a tool for secondary education, especially science and mathematics. Teaching machines were considered as more suitable for elementary English; programmed texts were more often used effectively in secondary mathematics. In general, there was a high concentration of reports of effective use for all of the newer media in one or more of the subject areas (mathematics, foreign language, and English) where use of films and filmstrips had been relatively infrequent. It appears as if attempts to increase the variety of instructional materials which are appropriate for these three subject areas have met with a considerable degree of success.

VI. PROSPECTS FOR THE FUTURE

The future builds on the past. There was considerable growth in the absolute amount, the relative amount, and the variety of audio-visual equipment in the public schools from June 1961 to January 1964. Will there be similar, accelerated, or decelerated growth in the next three year period? An analysis of district plans for future use of each of the eleven media may provide insight into the growth potential of these instructional techniques.

Change in Plans for Media Use

Each respondent was asked to project his plans for use of the eleven media into the 1966-67 school year.[26] As before, the responses were reduced to a "continue present use" vs. "increase use" dichotomy. As shown in Table 25, the proportion of school systems which planned to increase use of the technique rose sharply for seven of the eleven media between 1961 and 1964. The number of districts planning greater use of the language laboratory dropped slightly. An intention to continue current levels of use was characteristic of plans for radio, opaque projectors, and the teaching machine, the only media for which fewer than 50 per cent of the districts reported plans for increased use. In 1961 the superintendents had shown the greatest interest in language laboratories; in 1964 their first choice for expansion was the overhead projector.

The analysis presented in Table 26 takes advantage of the fact that future intentions were obtained from the same group of districts

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[26] See Question 13, 1964 Follow-up Questionnaire, Appendix B.

TABLE 25

CHANGE IN PLANS TO INCREASE USE OF AUDIOVISUAL MEDIA 1961-1966 FOR 238 DISTRICTS[a]

Media	Planned to Increase Use 1961-1964		Plan to Increase Use 1964-1966	
	Number	Per Cent	Number	Per Cent
16mm films	63	26.5	130	54.6
Filmstrips	79	33.2	159	66.8
Records	85	35.7	136	57.1
Tapes	85	35.7	179	75.2
Opaque projector	91	38.2	92	38.7
Radio	30	12.6	42	17.6
Television	71	29.8	136	57.1
Overhead projector	104	43.7	195	81.9
Language laboratory	131	55.0	123	51.7
Programmed text	81	34.0	149	62.6
Teaching machine	81	34.0	104	43.7

[a] Increase use is defined as either planning to try a medium or to emphasize or increase the use of a medium. Respondents who checked "continue present use," "no plan to try" or did not answer were considered as desiring to maintain the status quo

TABLE 26

STABILITY OF PLANS TO INCREASE USE OF AUDIOVISUAL MEDIA 1961-1966 FOR 238 DISTRICTS

Media	Per Cent Whose Plans Were:				
	Increase Use Both Years	Increase Use 1961-64 Status Quo 1964-66	Status Quo 1961-64 Increase Use 1964-66	Status Quo Both Years	P (Chi-Square)[a]
16mm films	18.5	8.0	36.1	37.4	**
Filmstrips	24.4	8.8	42.4	24.4	**
Records	23.5	12.2	33.6	30.7	**
Tapes	30.2	5.5	45.0	19.3	**
Opaque projector	12.2	26.0	26.5	35.3	
Radio	4.2	8.4	13.4	74.0	
Television	21.8	8.0	35.3	34.9	**
Overhead projector	38.2	5.5	43.7	12.9	**
Language laboratory	34.5	20.6	17.2	27.7	
Programmed text	23.5	10.5	39.1	26.9	**
Teaching machine	16.8	17.2	26.9	39.1	*

[a] The test used here is based upon the difference between "increase-use" planners in 1961 and "increase-use" planners in 1964. (Quinn McNemar, "Note on the sampling error of the difference between correlated proportions or percentages." Psychometrika, 1947, 12, pp. 153-157.)

*Difference significant at 5% level.

**Difference significant at 1% level.

at two periods in time. There was a significant change in plans for eight of the eleven media, resulting in every instance from a change toward increased use of the medium in question. The fact that 60 per cent or more of the districts who had planned increased use in 1961 reaffirmed these plans in 1964 for all items except the radio, opaque projector, and teaching machine is noteworthy. Either earlier plans for expansion had not been fully realized despite the large inventory increases or realization of these plans had created a demand for further expansion.[27]

District Characteristics and Future Plans

There was a general trend toward a desire for greater use of the seven most popular materials regardless of the number of pupils in the system. Minor exceptions were a decreased interest in records among districts with 12,000 to 25,000 students and in overhead transparencies for districts with 300 to 600 pupils. In addition, there was general interest in making greater use of programmed materials, particularly programmed texts, in districts of all sizes. (See Tables A-32 and A-33.)

One of the most interesting relationships between district characteristics and future plans was that associated with the breadth of education offered by the system. Plans for increased use of all of the older media, except radio, were reported more frequently by elementary districts, whereas plans for increased use of all five of the newer media were reported more frequently by combined districts. (See Table A-34.) A differential tendency to emphasize the newer media was also associated with the number of schools in the district with one notable exception. Systems with 6 or more schools were less interested in extending the use of the teaching machine than were districts with 3 to 5 schools. (See Table A-35.)

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[27] The figures presented in Table 26 are the proportion of the total sample of 238 cases which fell into each of the four categories. Therefore, the amount of change within an initial planning group is obscured. For example, 44 districts (or 18.5 per cent of the sample) reported plans to increase the use of 16 mm films in both years. But this group of 44 districts was included among the 63 districts which had planned for increased use in 1961 and represents 70 per cent of the initial planning group.

As might be expected, future intentions varied with the position of the person responsible for administering the audiovisual program. The proportion of districts planning increased use of all of the media was consistently higher where there was central administrative coordination than where the superintendent or school personnel were responsible for the program. The proportion of districts with plans to increase use was highest of all among school systems with an audiovisual director for all media except opaque projectors and radios. (See Table A-36.)

The pattern of association between each of the district characteristics and plans for expanded use of the various audiovisual techniques by 1966 was very much like that found between these same characteristics and increases in the relative amount of equipment on hand. Plans for increased use as well as reports of increased inventories were most frequently made by large districts with a variety of educational offerings and central coordination of their audiovisual program.

Inventory Level and Future Plans

The character of the association between inventory level and plans has changed since 1961. At that time, approximately the same proportion of districts was planning to increase the use of each material over the next two years regardless of their current inventory status. (See Table A-27.) By 1964, however, future intentions were differentially associated with inventory level for four of the eleven media. The relationships reported in Table 27 are strikingly similar to the relationships found between 1961 inventory levels and actual increases by 1964. Districts with below median amounts of equipment per school are more likely to plan increased use of opaque projectors and language laboratories than are districts with above median inventories. There is a direct association between inventory level and plans to increase use of both television and the overhead projector. Although not quite of the magnitude to attain significance, there is also a direct relationship between plans and inventory level for the 16 mm projector.

The reader will recall that increases in the amount of audiovisual equipment per school from 1961 to 1964 were significantly related to 1961 inventory levels for five of the same nine media. There was a positive correlation between the two for 16 mm projectors, television sets, and overhead projectors. There was a negative association between the two for opaque projectors and language laboratories. Inventory increase for the other four media was unrelated to 1961 inventory levels.[28]

Several implications can be drawn from the associations between inventory level and future plans. First, the general upward shift in the amount of equipment available for classroom instruction has stimulated interest in greater use of audiovisual equipment in the future. The data

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[28] The regression analysis could not be made for either programmed texts or teaching machines because only 3 districts reported use of either one of these materials in 1961.

TABLE 27

1964 INVENTORY LEVEL AND PLANS TO INCREASE USE OF AUDIOVISUAL MEDIA 1964-1966 FOR 238 DISTRICTS

Equipment	Above Median 1964		Below Median 1964		Not Have 1964	
	No. of Dis-tricts	Per Cent Plan to Increase Use 1964-66	No. of Dis-tricts	Per Cent Plan to Increase Use 1964-66	No. of Dis-tricts	Per Cent Plan to Adopt
16mm projector	120	60.8	118	48.3	-	-
Slide-filmstrip projector	112	69.6	120	64.2	6	66.7
Record player	119	58.8	119	55.5	-	-
Tape recorder	117	81.2	116	71.6	5	20.0
Opaque projector	107	30.8	107	47.7*	24	33.3
Radio	104	13.5	78	23.1	56	17.9
Television	83	69.9	79	67.1	76	32.9**
Overhead projector	96	93.8	92	83.7	50	52.0**
Language laboratory (secondary schools only)	59	55.9	59	76.3	88	39.0**

**Difference significant at 9% level.

**Difference significant at 1% level.

presented in Table 28 corroborate this trend. There is a positive association between inventory increase from 1961 to 1964 and plans for 1966 for nine of the eleven media (all but filmstrips and records). This finding is in line with Finn's argument that growth in technological sophistication will create the appetite for further technological growth in education. Second, if future plans are implemented, the differences between the "haves" and the "have nots" will become accentuated. The rich (or high inventory level districts) will continue to get richer. The poor (or low level inventory districts) will fall farther behind.

Although there are more rich than poor in our affluent society, there is evidence from these data that there may be a "hard core" group of school systems. These are represented by the superintendents who consider their districts to be too small and too poor to adopt any of the newer media.[29] Not only do they now have only a limited amount of audiovisual equipment, but they report no intentions of expanding their inventories in the future. Unless the promoters of educational change can convince these administrators, and their school boards, that they, too, can profit from innovation, the contrasts in audiovisual equipment resources will continue to increase.

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[29] The emphasis in this line of reasoning is placed on the image of the district rather than on the "objective" circumstances for several reasons. Not all of the small districts reported that they found the newer techniques inappropriate for their systems or that they were too poor to afford them. Both inventory increases and future plans were found to be relatively independent of school district wealth as measured by either instructional expenditure per pupil or current expenditure per pupil. Some of the small districts had adopted one or more of the newer media with apparent success.

TABLE 28

INVENTORY INCREASE 1961-1964 AND PLANS TO INCREASE USE OF AUDIOVISUAL MEDIA 1964-1966 FOR 238 DISTRICTS

Media	Increased Inventory 1961-1964		No Inventory Increase 1961-1964	
	Number of Districts	Per Cent Plan to Increase Use 1964-66	Number of Districts	Per Cent Plan to Increase Use 1964-66
16mm films	148	58.8	90	47.8*
Filmstrips	135	65.2	103	68.9
Records	170	41.2	68	44.1
Tapes	168	78.6	70	32.9**
Opaque projector	122	45.9	116	31.0*
Radio	97	18.6	141	17.0
Television	107	75.7	131	42.0**
Overhead projector	161	90.1	77	64.9**
Language laboratory (secondary schools only)	69	72.5	137	65.7
Programmed text	77	85.5	161	51.6**
Teaching machine	46	67.4	192	38.0*

*Difference significant at 5% level.

**Difference significant at 1% level.

A Prediction Model for Future Inventory Increase

Many factors can intervene between plan and realization. Federal matching funds and increased public interest in experimenting with a variety of instructional techniques encourage investment of funds in audiovisual devices. Premature claims of having discovered the panacea (or its second cousin), fears of displacement of the teacher, or unexpected shifts in enrollment and budget requirements discourage expansion of audiovisual resources. No one, not even the Delphic Oracle, can say what will happen in the future with certainty.

However, we do have a bit of past history to build on. We know how many of the districts which planned to increase use of audiovisual techniques between 1961 and 1964 actually did so. Similarly, we know how many districts increased their inventories of each of the major media although they had no announced plans to do so.[30] If one can assume that the forces working for and against increased investments in audiovisual equipment will exert about the same influence between 1964 and 1966 that they did in the previous time period, the relative proportion of each group of planners which experienced the earlier inventory increase can be used as a prediction factor in forecasting a probable proportion of districts who might be expected to experience an inventory increase by the fall of 1966.

A straight line projection could be made from the over-all proportion of districts reporting increases for each medium.[31] But such a projection would not take into account any significant shifts in plans for the future. Therefore, we computed the proportion of the sample districts which might be expected to experience future inventory increases for each of the eleven media separately for each planning group. The results of this analysis, given in Table 29, not only support but accentuate the optimistic picture of the future presented by a straight line progression.

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[30] See Table 14, p. 37.

[31] The over-all proportion of districts reporting increases in the amount of equipment per school for nine of the media are given in Table 4, p. 12. The proportion of districts reporting adoption of programmed texts and teaching machines are given in Table 16, p. 46.

Estimates made separately for each planning group suggest that a greater proportion of the school districts will increase their relative equipment inventories for eight of the eleven items than one might expect would do so from the simpler model. The largest disparities are obtained for programmed texts, tape recorders, television sets, and record players where calculations based on plans raise the predicted proportion of increases from 4 to 6 per cent for each of the four media. The two methods yield almost identical results for radios, opaque projectors, and teaching machines. The other differences are small but all in the direction of a higher rate of increase.

The prediction model could be further refined for television sets, language laboratories, and the overhead projector by using a different prediction factor (their own proportionate increase) for the "haves" and the "have nots,"[32] thus building the model from four equations rather than two. The results of this analysis are given in Table 30. More districts may be expected to increase their inventories of television

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[32] The proportion of each group reporting inventory increases from 1961 to 1964 is given in Table 15, p. 39.

TABLE 29

ESTIMATED NUMBER OF DISTRICTS WHO SHOULD INCREASE AMOUNT OF EQUIPMENT PER SCHOOL BY 1966 FOR ELEVEN MEDIA
(Prediction Based on Proportion of Increase for Each Planning Group)

Equipment	Plan to Increase by 1966	Prediction Factor[a]	Predicted Number	No Plan to Increase by 1966	Prediction Factor[a]	Predicted Number	Sum of Predicted Numbers	Per Cent Which Should Increase
16mm projector	130	73.0	95	108	58.3	55	150	63.0
Slide-filmstrip projector	159	58.2	93	79	56.0	44	137	57.6
Record player	136	77.6	106	102	68.0	69	175	73.5
Tape recorder	179	80.0	143	59	65.4	39	182	76.5
Opaque projector	92	53.8	49	146	49.7	73	122	51.3
Radio	42	46.7	20	196	39.9	78	98	41.2
Television set	136	56.3	77	102	40.1	41	118	49.6
Overhead projector	195	73.1	143	43	63.4	27	170	71.4
Language laboratory (secondary schools only)	117	42.7	50	89	19.5	17	67	32.5
Programmed text	149	45.7	68	89	25.0	22	90	37.8
Teaching machine	104	22.2	23	134	16.2	22	45	18.9

[a] The prediction factor is shown as a per cent.

TABLE 30

REFINED ESTIMATE OF NUMBER OF DISTRICTS WHO SHOULD INCREASE AMOUNT OF EQUIPMENT PER SCHOOL FOR THREE NEWER MEDIA

(Prediction Based on Proportion of Increase for Each Planning Group for Each Inventory Status Level)

Equipment	Plan to Increase by 1966	Prediction Factor[a]	Predicted Number	No Plan to Increase by 1966	Prediction Factor[a]	Predicted Number	Sum of Predicted Numbers	Per Cent Which Should Increase
Had Equipment in 1964								
Television set	111	62.2	69	51	55.3	28	97	60.0
Overhead projector	167	82.7	138	21	69.5	15	153	81.3
Language laboratory (secondary schools only)	78	26.5	21	40	20.0	8	29	24.5
Not Have Equipment in 1964								
Television set	25	46.2	12	51	24.4	12	24	31.5
Overhead projector	28	63.5	18	22	58.7	13	31	26.0
Language laboratory (secondary schools only)	39	48.9	19	49	19.2	9	28	31.8
Combined Predictions								
Television set							121	50.8
Overhead projector							184	77.3
Language laboratory (secondary schools only)							57	27.7

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[a] The prediction factor is shown as a per cent.

sets and overhead projectors, particularly the latter, if this model is used; fewer districts may be expected to install new language laboratories.

The estimates derived from Table 30 are based on both the differences in plans and the differences in the proportion of inventory increases reported by those who do or do not have a certain type of audiovisual equipment. Further refinements in the model could be achieved by introducing other factors found to be significantly associated with either inventory increase or future plans (or both) into the equation. If multiple regression techniques were employed to determine the relative weight of these characteristics, the probable accuracy of the prediction model would be increased.

We make no particular claim for the validity of the model suggested here. Rather, it is presented for two reasons. First, it may stimulate others to construct their own models, using another set of criterion variables. Second, it can serve as a "standard" against which to compare the actual increases reported in the 1966-67 school year. Deviations in either direction from the expected results can then be analyzed with the objective of improving the power of the prediction model, by bringing to light other critical factors which should be taken into account. If we can continue to presume upon the unflagging courtesy and cooperation of the 238 districts that have participated in the study since 1961, we would like to test the model in 1967.

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APPENDIX A

Appendix Tables A-1 to A-36

TABLE A-1

NUMBER OF TEACHERS AND PUPILS PER UNIT OF EQUIPMENT IN 1961 FOR DISTRICTS ENROLLING 150-24,999 PUPILS: COMPARISON OF POPULATION ESTIMATES AND SAMPLE VALUES

Equipment	1961 Population Estimates for 15,620 Districts[a]		1961 Sample Values for 238 Districts	
	Teachers per Equipment	Pupils per Equipment	Teachers per Equipment	Pupils per Equipment
16mm projector	12.3	300	11.0	275
Slide-filmstrip projector	11.3	277	12.1	303
Record player	4.3	106	3.8	94
Tape recorder	16.5	404	15.5	389
Opaque projector	35.3	864	33.8	847
Radio	17.1	418	19.5	489
Television set	35.5	870	35.5	889
Overhead projector	97.2	2,380	86.8	2,173

[a] Estimates based on responses of 2500 districts to 1961 Bureau of Social Science Research survey of audiovisual equipment in U. S. public school districts.

TABLE A-2

CHANGE IN TOTAL NUMBER OF TEACHERS, PUPILS, AND SCHOOLS 1961-1964 BY DISTRICT SIZE

District Size	Total Teachers			Total Pupils			Total Schools		
	Number 1961	Number 1964	Per Cent Change	Number 1961	Number 1964	Per Cent Change	Number 1961	Number 1964	Per Cent Change
Total	37,925	45,254	19.3	949,732	1,083,341	14.1	2,096	2,206	5.2
2	9,670	11,895	23.0	250,176	292,763	17.0	441	486	10.2
3	11,192	13,366	19.4	287,658	325,125	13.0	573	616	7.5
4	9,865	11,677	18.4	245,027	278,533	13.7	574	583	1.6
5	5,208	6,035	15.9	123,881	138,708	12.0	327	338	3.4
6	1,206	1,378	14.3	25,956	28,749	10.8	93	98	5.4
7	600	697	16.2	13,084	15,224	16.4	60	57	-5.0
8	184	206	12.0	3,950	4,239	7.3	28	28	No Change

TABLE A-3

CHANGE IN NUMBER OF ELEMENTARY TEACHERS, PUPILS, AND SCHOOLS 1961-1964 BY DISTRICT SIZE

District Size	Elementary Teachers			Elementary Pupils			Elementary Schools		
	Number 1961	Number 1964	Per Cent Change	Number 1961	Number 1964	Per Cent Change	Number 1961	Number 1964	Per Cent Change
Total	23,473	26,538	13.1	646,393	701,657	8.6	1,594	1,665	4.4
2	5,675	6,649	17.2	166,325	184,099	10.7	337	365	8.3
3	7,151	8,059	12.7	198,259	213,048	7.5	440	474	7.7
4	6,303	7,039	11.7	170,063	185,402	9.0	452	450	-0.5
5	3,114	3,393	9.0	81,901	86,332	5.4	241	251	4.2
6	734	830	13.1	17,659	18,964	7.4	66	70	6.1
7	380	445	17.1	9,277	10,806	16.5	40	37	-7.5
8	116	123	6.0	2,909	3,006	3.3	18	18	No Change

TABLE A-4

CHANGE IN NUMBER OF SECONDARY TEACHERS, PUPILS, AND SCHOOLS 1961-1964 BY DISTRICT SIZE

District Size	Secondary Teachers			Secondary Pupils			Secondary Schools		
	Number 1961	Number 1964	Per Cent Change	Number 1961	Number 1964	Per Cent Change	Number 1961	Number 1964	Per Cent Change
Total	14,411	18,607	29.1	303,323	379,860	25.2	504	543	7.7
2	3,956	5,147	30.1	83,851	108,664	29.6	104	121	16.4
3	4,041	5,297	31.1	89,399	110,267	23.3	133	142	6.8
4	3,562	4,638	30.2	74,964	93,107	24.2	122	133	9.0
5	2,092	2,642	26.3	41,990	52,276	24.5	86	87	1.2
6	472	548	16.1	8,307	9,885	19.0	28	29	3.6
7	220	252	14.6	3,771	4,428	17.4	20	20	No Change
8	68	83	22.1	1,041	1,233	18.4	11	11	No Change

TABLE A-5

CHANGE IN PUPIL-TEACHER RATIO 1961-1964 BY DISTRICT SIZE

District Size	Elementary Pupil-Teacher Ratio[a]			Secondary Pupil-Teacher Ratio[a]		
	1961	1964	Difference	1961	1964	Difference
Total	27.5	26.4	-1.1	21.0	20.4	-0.6
2	29.3	27.7	-1.6	21.2	21.1	-0.1
3	27.7	26.4	-1.3	22.1	20.8	-0.3
4	27.0	26.3	-0.7	21.0	20.1	-0.9
5	26.3	25.4	-0.9	20.1	19.8	-0.3
6	24.1	22.8	-1.3	17.6	18.0	+0.4
7	24.4	24.3	-0.1	17.1	17.6	+0.5
8	25.1	24.4	-0.7	15.3	14.9	-0.4

[a] See Tables A-3 and A-4 for numbers of teachers and pupils in each category.

TABLE A-6

MEAN NUMBER OF TEACHERS PER SCHOOL FOR 1961 AND 1964 BY DISTRICT SIZE

District Size	Total Teachers Per School		Elementary Teachers Per School		Secondary Teachers Per School	
	1961	1964	1961	1964	1961	1964
Total	18.1	20.5	14.7	15.9	28.6	34.3
2	21.9	24.5	16.8	18.2	38.0	42.5
3	19.5	21.7	16.2	17.0	30.4	37.3
4	17.2	20.0	13.9	15.6	29.2	34.9
5	15.9	17.9	12.9	13.5	24.3	30.4
6	13.0	14.1	11.1	11.9	16.9	18.9
7	10.0	12.2	9.5	12.0	11.0	12.6
8	6.6	7.4	6.4	6.8	6.2	7.6

TABLE A-7

MEAN NUMBER OF PUPILS PER SCHOOL FOR 1961 AND 1964 BY DISTRICT SIZE

District Size	Total Pupils Per School		Elementary Pupils Per School		Secondary Pupils Per School	
	1961	1964	1961	1964	1961	1964
Total	451	491	405	421	602	700
2	567	602	494	504	806	898
3	502	528	451	450	672	776
4	427	478	376	412	614	700
5	379	410	340	344	408	601
6	279	293	268	271	297	341
7	218	267	231	292	189	221
8	141	151	162	167	95	112

TABLE A-8

INCREASE IN AMOUNT OF NINE ITEMS OF AUDIOVISUAL EQUIPMENT 1961-1964 BY DISTRICT SIZE

District Size	Number of Districts	Per Cent Increase 1961-1964								
		16mm Projector	Slide-Filmstrip Projector	Record Player	Tape Recorder	Opaque Projector	Radio	Television Set	Overhead Projector	Language Laboratory
Per Cent Increase (All Districts)	238	26.7	28.3	32.1	54.9	33.1	33.0	123.1	175.5	112.1
2	16	29.6	24.9	24.8	55.3	37.4	18.7	109.0	106.1	160.0
3	34	24.9	34.0	33.4	44.5	20.8	52.5	83.0	139.2	37.5
4	56	29.4	28.3	38.2	74.4	40.1	34.2	234.2	255.7	116.7
5	58	21.6	22.2	32.5	44.1	41.8	32.1	107.7	392.1	105.6
6	30	26.3	32.6	51.4	48.8	36.8	7.3	42.9	233.3	225.0
7	27	20.0	39.2	37.8	45.7	No Change	21.2	175.0	112.5	Indeterminate[a]
8	17	4.4	8.0	20.0	46.2	60.0	23.5	No Change	100.0	Indeterminate[a]

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[a] None of the districts in the group reported a language laboratory in 1961; 3 reported such an installation in 1964.

TABLE A-9

INCIDENCE OF OWNERSHIP OF NINE ITEMS OF AUDIOVISUAL EQUIPMENT 1961 BY DISTRICT SIZE

District Size	Number of Districts	Per Cent of Districts Reporting Item								
		16mm Projector	Slide-Filmstrip Projector	Record Player	Tape Recorder	Opaque Projector	Radio	Television Set	Overhead Projector	Language Laboratory
Per Cent ownership (All districts)	238	99.6	93.7	98.3	95.4	84.9	67.6	54.6	46.6	27.7
2	16	100.0	100.0	100.0	100.0	100.0	87.5	81.2	87.5	37.5
3	34	100.0	94.1	100.0	100.0	100.0	91.2	82.4	61.8	44.1
4	56	100.0	94.6	100.0	100.0	92.9	69.6	57.1	50.0	41.1
5	58	98.3	96.6	96.6	98.3	93.1	67.2	60.3	48.3	31.0
6	30	100.0	86.7	96.7	96.7	80.0	53.3	43.3	43.3	13.3
7	27	100.0	88.9	100.0	85.2	63.0	51.9	25.9	22.2	-
8	17	100.0	94.1	94.1	70.6	29.4	47.1	11.8	5.9	-

TABLE A-10

INCIDENCE OF OWNERSHIP OF NINE ITEMS OF AUDIOVISUAL EQUIPMENT 1964 BY DISTRICT SIZE

District Size	Number of Districts	Per Cent of Districts Reporting Item								
		16mm Projector	Slide-Filmstrip Projector	Record Player	Tape Recorder	Opaque Projector	Radio	Television Set	Overhead Projector	Language Laboratory
Per cent ownership (All districts)	238	100.0	97.5	100.0	97.9	89.9	76.5	68.1	79.0	51.7
2	16	100.0	100.0	100.0	100.0	100.0	81.2	81.2	100.0	81.2
3	34	100.0	100.0	100.0	100.0	100.0	97.1	94.1	91.2	55.9
4	56	100.0	94.6	100.0	100.0	94.6	82.1	80.4	92.9	67.8
5	58	100.0	98.3	100.0	100.0	98.3	74.1	72.4	84.5	60.3
6	30	100.0	90.0	100.0	100.0	93.3	56.7	56.7	83.3	40.0
7	27	100.0	100.0	100.0	92.6	63.0	59.3	40.7	48.1	11.1
8	17	100.0	100.0	100.0	82.4	47.1	64.7	12.0	11.8	17.6

TABLE A-11

NUMBER OF TEACHERS PER UNIT OF EQUIPMENT 1961 BY DISTRICT SIZE

District Size	Number of Districts	Number of Teachers	Number of Teachers per Unit of Equipment							
			16mm Pro-jector	Slide-Filmstrip Projector	Record Player	Tape Re-corder	Opaque Pro-jector	Radio	Tele-vision Set	Over head Pro-jector
Total	238	37,925	11.0	12.1	3.8	15.5	33.8	19.5	35.5	86.8
2	16	9,670	11.8	11.5	3.0	13.4	30.4	17.0	28.9	59.0
3	34	11,192	12.9	12.9	3.8	16.0	34.2	23.3	33.4	93.3
4	56	9,365	12.9	12.0	4.1	17.0	35.6	17.3	48.1	112.0
5	58	5,208	12.0	12.0	4.5	17.0	38.9	20.7	33.6	137.0
6	30	1,206	12.2	12.7	5.7	14.7	31.7	29.4	43.1	67.0
7	27	600	10.9	11.8	4.0	17.1	27.3	18.2	75.0	75.0
8	17	184	8.0	7.4	4.6	14.2	36.8	10.8	92.0	184.0

TABLE A-12

NUMBER OF TEACHERS PER UNIT OF EQUIPMENT 1964 BY DISTRICT SIZE

District Size	Number of Districts	Number of Teachers	Number of Teachers per Unit of Equipment							
			16mm Projector	Slide-Filmstrip Projector	Record Player	Tape Recorder	Opaque Projector	Radio	Television Set	Overhead Projector
Total	238	45,254	10.4	11.2	3.4	12.0	30.3	17.5	19.0	37.6
2	16	11,895	11.6	11.4	3.0	10.6	27.2	17.7	17.0	35.2
3	34	13,366	12.4	11.5	3.4	13.2	33.8	18.3	21.8	46.6
4	56	11,677	11.8	11.0	3.5	11.5	30.1	15.7	17.1	37.3
5	58	6,035	11.4	11.4	3.9	13.7	31.8	18.1	18.7	29.2
6	30	1,378	11.0	10.9	4.3	11.3	26.5	31.3	34.4	23.0
7	27	697	10.6	9.8	3.4	13.7	31.7	17.4	31.7	41.0
8	17	206	8.6	7.6	4.3	10.8	25.8	9.8	103.0	103.0

TABLE A-13

"IDEAL" NUMBER OF TEACHERS PER UNIT OF EQUIPMENT 1961 BY DISTRICT SIZE

District Size	Number of Districts	Number of Teachers	Ideal[a] Number of Teachers per Unit of Equipment							
			16mm Pro-jector	Slide-Filmstrip Projector	Record Player	Tape Re-corder	Opaque Pro-jector	Radio	Tele-vision Set	Over-head Pro-jector
Total	238	37,925	9.5	10.0	3.3	11.7	23.9	14.3	15.6	33.2
2	16	9,670	11.1	10.1	2.8	10.4	22.7	13.2	14.9	25.6
3	34	11,192	11.4	10.5	3.1	11.6	22.8	15.4	12.9	33.8
4	56	9,865	11.0	9.9	3.6	12.7	25.6	13.4	21.1	42.0
5	58	5,208	10.0	9.6	3.9	13.3	27.6	16.7	15.6	40.7
6	30	1,206	9.6	10.0	5.2	11.6	20.8	22.3	18.8	27.4
7	27	600	9.7	9.0	3.3	11.3	20.7	9.4	18.8	28.6
8	17	184	6.8	6.1	3.8	9.7	16.7	6.3	23.0	26.3

[a] Ideal is operationally defined as the number of teachers/number of units owned + number of additional units needed.

TABLE A-14

"IDEAL" NUMBER OF TEACHERS PER UNIT OF EQUIPMENT 1964 BY DISTRICT SIZE

District Size	Number of Districts	Number of Teachers	Ideal[a] Number of Teachers per Unit of Equipment							
			16mm Projector	Slide-Filmstrip Projector	Record Player	Tape Recorder	Opaque Projector	Radio	Television Set	Overhead Projector
Total	238	45,254	8.7	9.3	3.0	9.4	24.1	12.3	10.0	14.8
2	16	11,895	9.6	9.9	2.6	8.4	24.6	9.9	7.0	13.9
3	34	13,366	10.2	9.1	3.0	10.0	25.5	14.5	12.7	15.1
4	56	11,677	10.1	9.0	2.9	9.2	23.4	12.5	10.9	15.1
5	58	6,035	10.0	9.5	3.5	10.6	23.0	13.0	10.1	12.2
6	30	1,378	9.4	8.8	3.8	9.1	19.7	17.9	18.1	14.2
7	27	697	9.6	8.4	2.8	11.6	23.2	12.2	22.5	13.2
8	17	206	6.9	6.1	3.6	8.2	20.6	9.8	34.3	20.6

[a] Ideal is operationally defined as the number of teachers/number of units owned + number of additional units needed.

TABLE A-15

INCREASE IN NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 BY DISTRICT SIZE

District Size	Number of Districts	Per Cent Reporting Increase in Number of Units Per School								
		16mm Projector	Slide-Filmstrip Projector	Record Player	Tape Recorder	Opaque Projector	Radio	Television Set	Overhead Projector	Language Laboratory[a]
Total	238	62.2	56.8	71.0	70.6	51.3	40.7	45.0	67.6	30.7
2	16	81.2	68.7	75.0	87.5	75.0	50.0	74.9	81.2	68.8
3	34	70.6	70.6	76.5	79.5	61.8	70.6	70.6	82.3	20.6
4	56	82.1	69.6	83.9	87.5	67.8	50.0	66.0	85.7	39.3
5	58	62.0	56.9	75.9	74.1	55.1	36.2	39.6	75.8	31.0
6	30	63.4	46.7	70.0	66.7	46.7	16.7	20.0	63.3	30.0
7	27	33.3	40.7	55.6	37.0	7.4	29.6	18.5	29.6	11.1
8	17	5.9	17.6	23.5	29.4	17.6	17.6	-	5.9	17.6

[a] Calculated on the number of secondary schools rather than the total number of schools in the district.

TABLE A-16

DISTRIBUTION OF NUMBER OF UNITS OF INCREASE IN AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR DISTRICTS REPORTING INCREASE

Equipment	Number of Districts	Distribution of Increase	
		Range	Median
16mm projector	148	0.012 - 2.000	0.39
Slide-filmstrip projector	135	0.009 - 2.667	0.44
Record player	169	0.014 - 10.000	1.10
Tape recorder	168	0.025 - 12.032	0.51
Opaque projector	122	0.006 - 1.150	0.24
Radio	97	0.011 - 6.060	0.48
Television set	107	0.011 - 9.000	0.49
Overhead projector	161	0.007 - 7.000	0.39
Language laboratory (secondary schools only)	69	0.071 - 1.000	0.50

TABLE A-17

CHANGE IN DISTRIBUTION OF NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR 238 DISTRICTS

Equipment	1961		1964	
	Range	Median[a]	Range	Median[a]
16mm projector	0 - 9.67	1.22	0.25 - 11.00	1.44
Slide-filmstrip projector	0 - 9.00	1.31	0 - 11.00	1.53
Record player	0 - 23.41	2.97	0.33 - 24.77	3.69
Tape recorder	0 - 10.47	0.97	0 - 12.89	1.27
Opaque projector	0 - 2.00	0.51	0 - 2.00	0.61
Radio	0 - 9.27	0.98	0 - 10.68	0.98
Television set	0 - 3.00	0.52	0 - 9.00	0.73
Overhead projector	0 - 3.00	0.28	0 - 5.00	0.49
Language laboratory (secondary schools only)	0 - 2.00	0.54	0 - 2.00	0.69

[a] Median calculated on number of districts who reported having the equipment. See Table 3 for ownership figures for both 1961 and 1964.

TABLE A-18

1961 TYPE OF SCHOOL DISTRICT BY DISTRICT SIZE

District Size	Number of Districts	Per Cent Which Were		
		Elementary Only	Combined	Secondary Only
Total	238	13.4	84.1	2.5
2	16	-	100.0	-
3	34	11.8	85.3	2.9
4	56	8.9	91.1	-
5	58	8.6	89.7	1.7
6	30	13.3	83.4	3.3
7	27	29.6	63.0	7.4
8	17	35.3	58.8	5.9

TABLE A-19

1961 NUMBER OF SCHOOLS BY DISTRICT SIZE

District Size	Number of Districts	Per Cent Reporting			
		1-2 Schools	3-5 Schools	6-11 Schools	12-44 Schools
Total	238	21.4	25.6	27.3	25.6
2	16	-	-	-	100.0
3	34	-	2.9	11.8	85.3
4	56	-	10.7	64.3	25.0
5	58	6.9	50.0	39.7	3.4
6	30	30.0	66.7	3.3	-
7	27	77.8	18.5	3.7	-
8	17	100.0	-	-	-

TABLE A-20

CHANGE IN NUMBER OF SCHOOLS 1961-1964 BY DISTRICT SIZE

District Size	Number of Districts	Per Cent Reporting			
		No Change in Number of Schools	Gained One School	Gained 2 or More Schools	Lost Schools
Total	238	60.1	14.7	16.0	9.2
2	16	12.5	12.5	62.5	12.5
3	34	38.2	8.8	38.2	14.8
4	56	51.8	21.4	16.1	10.7
5	58	67.2	19.0	6.9	6.9
6	30	70.0	20.0	3.3	6.7
7	27	81.5	3.7	3.7	11.1
8	17	100.0	-	-	-

TABLE A-21

CHANGE IN PUPIL-TEACHER RATIO 1961-1964 BY DISTRICT SIZE

District Size	Number of Districts	Per Cent Reporting That Pupil-Teacher Ratio Was:				
		Lower	No Change	Higher	Lower-Elementary Higher-Secondary	Higher-Elementary Lower-Secondary
Total	238	40.3	18.5	18.5	13.9	8.8
2	16	50.0	6.2	18.8	18.8	6.2
3	34	50.0	17.7	11.8	3.8	11.8
4	56	48.2	17.9	16.1	8.9	10.7
5	58	37.9	19.0	20.7	13.8	8.6
6	30	30.0	23.3	26.7	16.7	3.3
7	27	33.3	14.8	22.2	18.5	11.1
8	17	29.4	29.4	11.8	23.5	5.9

TABLE A-22

1960 PER PUPIL EXPENDITURE FOR INSTRUCTIONAL MATERIALS BY DISTRICT SIZE

District Size	Number of Districts	Per Cent of Districts with Per Pupil Expenditure of:						
		$1-7	$8-12	$13-17	$18-22	$23-27	$28+	No Answer
Total	238	27.3	20.6	20.6	11.8	6.7	11.8	1.2
2	16	50.0	18.8	18.8	12.5	-	-	-
3	34	41.2	20.6	20.6	5.9	8.8	2.9	2.9
4	56	30.4	25.0	25.0	3.6	8.9	7.1	-
5	58	20.7	15.5	25.9	20.7	6.9	10.3	-
6	30	23.3	20.0	13.3	6.7	6.7	23.3	6.7
7	27	14.8	22.2	18.5	25.9	3.7	14.8	-
8	17	17.6	23.5	5.9	5.9	5.9	41.2	-

TABLE A-23

1960 PER PUPIL EXPENDITURE AND INCREASE IN NUMBER OF UNITS OF AUDIOVISUAL EQUIPMENT PER SCHOOL 1961-1964 FOR 233 DISTRICTS[a]

Equipment	Per Cent Reporting Increase When Per Pupil Expenditure Was:		
	$80-299	$300-399	$400-920
(Number of Districts)	(72)	(92)	(69)
16mm projector	63.9	60.9	62.3
Slide-filmstrip projector	56.9	56.5	58.0
Record player	65.3	79.3	65.2
Tape recorder	68.0	69.6	75.4
Opaque projector	50.0	52.2	52.2
Radio	29.2	42.4	39.1
Television set	40.3	46.7	46.4
Overhead projector	66.7	63.0	75.4
Language laboratories (secondary schools only: N = 206)	30.8	29.1	44.8

[a] Five districts did not report their 1960 per pupil expenditure.

TABLE A-24

ABOVE MEDIAN NUMBER OF UNITS OF EQUIPMENT PER SCHOOL 1961 BY DISTRICT SIZE[a]

District Size	Number of Districts	Per Cent of Districts Reporting Above Median Number of Units Per School							
		16mm Projector	Slide-Film-strip Projector	Record Player	Tape Recorder	Opaque Projector	Radio	Television Set	Over head Projector
Total	238								
2	16	87.5	75.0	81.3	75.0	75.0	37.5	50.0	50.0
3	34	50.0	50.0	58.8	50.0	52.9	44.1	29.4	20.6
4	56	69.6	58.9	58.9	57.1	48.2	39.3	28.6	28.6
5	58	51.7	50.0	53.4	48.3	32.8	36.2	32.8	15.5
6	30	36.7	36.7	30.0	46.7	30.0	23.3	23.3	36.7
7	27	25.9	29.6	37.0	33.3	25.9	33.3	11.1	22.2
8	17	11.8	11.8	17.6	17.6	5.9	23.5	-	5.9

[a] Median calculated on number of districts who reported having the equipment. See Table A-9 for incidence of ownership by district size.

TABLE A-25

1964 POSITION OF DISTRICT LEVEL AUDIOVISUAL COORDINATOR BY DISTRICT SIZE

District Size	Number of Districts	Per Cent Reporting That AV Coordinator Was:				
		Audiovisual Director	Other Administrative Personnel	Superintendent	School Personnel	No One Designated
Total	238	18.9	25.2	23.1	22.7	10.1
2	16	37.5	62.5	-	-	-
3	34	32.4	44.1	2.9	11.8	8.8
4	56	28.6	37.5	12.5	14.3	7.1
5	58	17.2	15.6	31.0	24.1	12.1
6	30	6.6	10.0	36.7	36.7	10.0
7	27	-	7.4	37.0	37.0	18.6
8	17	-	-	47.1	41.1	11.8

TABLE A-26

1961 ASSESSMENT OF BEST USE OF AUDIOVISUAL MATERIALS BY DISTRICT SIZE

District Size	Number of Districts	Per Cent Reporting Best Use As			
		Integral	Integral and Supplementary	Supple- mentary	No Answer
Total	238	24.4	31.1	36.1	8.4
2	16	25.0	50.0	18.7	6.3
3	34	38.3	32.4	26.4	2.9
4	56	30.4	30.4	30.4	8.8
5	58	19.0	36.2	29.2	15.6
6	30	23.3	16.7	56.7	3.3
7	27	14.8	22.2	59.3	3.7
8	17	11.8	23.5	52.9	11.8

TABLE A-27

1961 INVENTORY LEVEL AND PLANS TO INCREASE USE OF AUDIOVISUAL MEDIA 1961-1964 FOR 238 DISTRICTS

Equipment	Above Median 1961		Below Median 1961		Not Have 1961	
	Number of Districts	Per Cent Planned to Increase Use 1961-64	Number of Districts	Per Cent Planned to Increase Use 1961-64	Number of Districts	Per Cent Planned to Increase Use 1961-64
16mm projector	120	27.5	117	26.1	1	-
Slide-filmstrip projector	112	38.4	111	29.7	15	20.0
Record player	119	40.3	115	32.2	4	-
Tape recorder	115	35.6	112	37.5	11	18.2
Opaque projector	93	40.8	109	33.9	36	44.5
Radio	84	14.3	77	16.9	77	6.5
Television	63	31.7	67	37.3	108	24.1
Overhead projector	57	49.1	54	44.5	127	41.0
Language laboratory	27	55.5	39	48.7	172	56.4

TABLE A-28

CORRELATION-REGRESSION CHARACTERISTICS FOR THE RELATION BETWEEN INCREASE IN EQUIPMENT PER SCHOOL AND EQUIPMENT PER SCHOOL

Equipment	$\bar{X}$	$\bar{Y}$	σ_x	σ_y	S_y	r
16mm projector	1.48	0.26	1.125	0.408	0.402	0.17*
Slide-filmstrip projector	1.49	0.30	1.165	0.573	0.571	0.06
Record player	4.37	1.12	3.983	1.957	1.957	-0.00
Tape recorder	1.12	0.52	1.106	1.071	1.070	0.04
Opaque projector	0.51	0.13	0.470	0.319	0.315	-0.16*
Radio	0.86	0.23	4.319	0.660	0.660	0.01
Television set	0.46	0.48	0.714	1.153	1.129	0.20**
Overhead projector	0.20	0.42	0.375	0.791	0.741	0.35**
Language laboratory (secondary schools only)	0.20	0.21	0.359	0.369	0.356	-0.26**

Definition of terms:

$\bar{X}$ = Mean of the ratio of equipment per school for each district for 1961.

$\bar{Y}$ = Mean increase in the ratio of equipment per school for each district for 1961-1964.

σ_x = Standard deviation of the ratio of equipment per school.

σ_y = Standard deviation of the increase in the ratio of equipment per school.

S_y = Standard error of estimate of the mean increase in the ratio of equipment per school.

r = Correlation coefficient between ratio of equipment per school and increase in the ratio of equipment per school.

---

*Significant at 5% level.
**Significant at 1% level.

TABLE A-29

ADOPTION OF FIVE NEWER MEDIA BY 1964 BY DISTRICT SIZE

District Size	Number of Districts	Per Cent Reporting Adoption of Each of the Newer Media by 1964				
		Television Instruction[a]	Overhead Projector	Language Laboratory	Programmed Text	Teaching Machine
Total	238	39.5	79.0	51.7	32.4	19.3
2	16	68.8	100.0	81.3	50.1	25.0
3	34	41.2	91.2	55.9	52.9	23.5
4	56	44.7	92.9	67.8	35.8	17.8
5	58	48.2	84.5	60.3	31.0	29.3
6	30	30.0	83.3	40.0	26.7	20.0
7	27	25.9	48.1	11.1	7.4	-
8	17	-	11.8	17.6	5.9	5.9

[a] Defined as a complete course or integral part of a course presented via television.

TABLE A-30

MAJOR CRITERIA FOR EVALUATING EFFECTIVENESS OF AUDIOVISUAL MEDIA BY DISTRICT SIZE

District Size	Number of Districts	Per Cent Reporting Use of: Subjective Judgments[a]	Observation and Testing	Teacher Demand	Curriculum Improvement
Total	238	65.1	50.8	26.1	16.0
2	16	81.2	62.5	25.0	12.5
3	34	61.8	44.1	38.2	33.5
4	56	58.9	41.1	26.8	16.1
5	58	72.4	51.7	19.0	15.5
6	30	73.3	56.7	33.3	20.0
7	27	55.6	59.3	22.2	14.8
8	17	52.9	58.8	17.6	-

[a] Includes reactions and evaluation by teachers, students, and/or supervisory staff.

TABLE A-31

MAJOR CRITERIA FOR EVALUATING EFFECTIVENESS OF AUDIOVISUAL MEDIA BY 1964 POSITION OF DISTRICT LEVEL AUDIOVISUAL COORDINATOR

Position of Audiovisual Coordinator	Number of Districts	Per Cent Reporting Use of:			
		Subjective Judgments[a]	Observation and Testing	Teacher Demand	Curriculum Improvement
Total	238	65.1	50.8	26.1	16.0
Audiovisual director	45	62.2	42.2	35.6	22.2
Other administrative personnel	60	61.6	50.0	25.0	23.3
Superintendent	55	76.2	58.2	20.0	10.9
School personnel	54	66.6	55.5	24.1	9.2
No one designated	24	50.0	41.7	29.2	12.5

[a] Includes reactions and evaluations by teachers, students, and/or supervisory staff.

TABLE A-32

PLANS TO INCREASE USE OF AUDIOVISUAL MEDIA 1961-1964 BY DISTRICT SIZE[a]

District Size	Number of Districts	Per Cent Reporting Plans to Increase Use by 1964 for Each Medium								
		16mm Films	Film-strips	Records and Tapes[b]	Opaque Pro-jector	Radio	Tele-vision	Overhead Pro-jector	Language Labora-tory	Programmed Materials[b]
Total	238	26.5	33.2	35.7	38.2	12.6	29.8	43.7	55.0	34.0
2	16	56.3	37.5	62.5	68.8	25.0	43.8	68.8	62.5	56.3
3	34	38.2	41.2	38.2	35.3	8.8	23.5	34.1	64.7	44.1
4	56	23.2	30.4	37.5	37.5	5.4	30.4	46.4	60.7	44.6
5	58	20.7	32.2	31.0	31.0	15.5	32.8	39.7	65.5	32.8
6	30	20.0	26.7	33.3	36.7	10.0	20.0	40.0	40.0	16.5
7	27	14.8	25.9	29.6	44.4	18.5	29.6	40.7	37.0	18.5
8	17	35.3	35.3	29.4	35.3	17.6	35.3	35.3	29.4	17.6

[a] "Increase use" is defined as either planning to try a medium or to emphasize or increase the use of a medium. Respondents who checked "continue present use," "no plan to try" or did not answer were considered as desiring to maintain the status quo.

[b] These media were combined in one question on the 1961 questionnaire.

TABLE A-33

PLANS TO INCREASE USE OF AUDIOVISUAL MEDIA 1964-1966 BY DISTRICT SIZE

District Size	Number of Districts	Per Cent Reporting Plans to Increase Use by 1966 for Each Medium										
		16mm Films	Film-strips	Records	Tapes	Opaque Projector	Radio	Television	Overhead Projector	Language Laboratory	Programmed Text	Teaching Machine
Total	238	54.6	66.8	57.1	75.2	38.7	17.6	57.1	81.9	51.7	62.6	43.3
2	16	75.0	68.8	43.8	75.0	18.8	12.5	62.5	93.8	68.8	87.5	43.8
3	34	76.5	82.4	73.5	85.3	26.5	11.8	73.5	85.3	52.9	79.4	41.2
4	56	66.1	75.0	62.5	87.5	44.6	21.4	73.2	91.1	66.1	75.0	51.8
5	58	46.6	62.1	53.4	65.5	43.1	19.0	58.6	91.4	62.1	65.5	53.4
6	30	33.3	50.0	46.7	83.3	46.7	20.0	40.0	80.0	40.0	43.3	46.7
7	27	37.0	56.6	59.3	51.9	33.3	14.8	33.3	59.3	25.9	29.6	22.2
8	17	47.1	70.6	46.1	70.6	41.2	17.6	29.4	41.2	11.8	41.2	11.8

TABLE A-34

TYPE OF DISTRICT AND PLANS TO INCREASE USE OF AUDIOVISUAL MATERIALS 1964-1966 FOR 232 DISTRICTS[a]

Media	Per Cent Planning to Increase Use For:	
	Elementary Districts	Combined Districts
(Number of districts)	(32)	(200)
16mm films	62.5	53.2
Filmstrips	78.1	65.2
Records	59.4	56.7
Tapes	81.2	74.1
Opaque projector	40.6	38.8
Radio	12.5	18.9
Television	50.0	58.2
Overhead projector	68.8	83.6
Language laboratory	18.8	56.7
Programmed text	53.1	64.2
Teaching machine	34.4	44.3

---

[a] Six districts with only secondary schools were omitted from this analysis.

TABLE A-35

NUMBER OF SCHOOLS AND PLANS TO INCREASE USE OF AUDIOVISUAL MATERIALS 1964-1966 FOR 238 DISTRICTS

Media	Per Cent Planning to Increase Use When Number of Schools Was:			
	1-2	3-5	6-11	12-44
(Number of Districts)	(51)	(61)	(65)	(61)
16mm films	49.0	32.8	64.6	70.5
Filmstrips	64.7	55.7	69.2	77.0
Records	56.9	50.8	61.5	59.0
Tapes	66.7	73.8	80.0	78.7
Opaque projector	39.2	42.6	38.5	34.4
Radio	17.6	16.4	20.0	16.4
Television	33.3	57.4	66.2	67.2
Overhead projector	62.7	83.6	92.3	85.2
Language laboratory	29.4	52.5	61.5	78.7
Programmed text	37.3	63.9	63.1	82.0
Teaching machine	25.5	57.4	40.0	47.5

TABLE A-36

1964 POSITION OF DISTRICT LEVEL AUDIOVISUAL COORDINATOR AND PLANS TO INCREASE USE OF AUDIOVISUAL MATERIALS 1964-1966 FOR 214 DISTRICTS[a]

Media	Per Cent Planning to Increase Use When AV Coordinator Was:			
	Audio-visual Director	Other Adminis-trative Personnel	Superin-tendent	School Personnel
(Number of Districts)	(45)	(60)	(55)	(54)
16mm films	73.3	66.7	34.5	44.4
Filmstrips	82.2	75.0	52.7	59.3
Records	64.4	63.3	43.6	57.4
Tapes	88.9	71.7	69.1	72.2
Opaque projector	22.2	36.7	36.4	53.7
Radio	13.3	21.7	18.2	24.1
Television	73.3	60.0	50.9	57.4
Overhead projector	97.8	81.7	69.1	81.5
Language laboratory	64.4	55.0	41.8	48.1
Programmed text	82.2	73.3	54.5	50.0
Teaching machine	53.3	48.3	36.4	38.9

[a] Twenty-four districts did not give the position of the district level coordinator in 1964.

APPENDIX B--QUESTIONNAIRES

Superintendent Questionnaire
A Follow-Up Study

DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON 25, D. C.

March 17, 1961

Dear School Administrator

The continuing efforts of local, State, and Federal governments to strengthen education are aided by the National Defense Education Act of 1958 in many ways, one of which is the support of research and dissemination activities in the new educational media under Title VII of the Act. An important step in the assessment of the effectiveness of these media is an estimate of what equipment and materials are available and how they are being used now. For this reason, the United States Office of Education has contracted with the Bureau of Social Science Research, an independent research organization, for the conduct of a nationwide survey of the availability and uses made of certain of these new educational media.

The sample of approximately 3,800 school districts has been carefully chosen to represent different enrollment size categories and types of administrative organization. Your participation in the study will be greatly appreciated. With your cooperation, this national survey can provide an estimate of the incidence of audio-visual equipment and materials available throughout the country. A summary of the Bureau's report will be sent to you when the study is completed.

Sincerely,

Wayne O. Reed
Acting U. S. Commissioner of Education

Enclosures

NO ENVELOPE OR POSTAGE NECESSARY FOR RETURNING THIS QUESTIONNAIRE

TO MAIL:

1. Close booklet so that the cover page and gummed edge of back flap are visible.
2. Moisten gummed edge of flap, and fold, sealing edge to cover.
3. Business reply panel will now be visible, and questionnaire may be mailed flat.

BUREAU OF SOCIAL SCIENCE RESEARCH, INC.
2017 Connecticut Ave., N.W., Washington 8, D. C.
ADams 4-4000

[redacted]

AUDIOVISUAL MEDIA IN PUBLIC SCHOOLS AND FACTORS INFLUENCING THEIR USE

This questionnaire is one of 3800 addressed to school districts across the country in order to obtain a general picture of the present use of audiovisual media, including television and radio. Only through your cooperation can we obtain the accurate information necessary for a proper evaluation of these teaching techniques.

You will notice that the questionnaire is divided into two sections. The reverse side of this sheet asks for an overview of the place of audiovisual media in your school program. The second section asks for factual data about the school system in general and audiovisual activities in particular.

So that all of us participating in the project will be speaking the same language, we have included a list of definitions for certain terms and an abstract describing the total study in some detail. *The small numbers throughout the questionnaire are for processing purposes only and should be disregarded.* The first sheet, which asks for identifying information, is perforated so that we may detach it. The second section of the questionnaire will then be identified by code number only.

We are sending you two copies of the questionnaire so that you may keep one for your files. Please fill out and return the other to us at your earliest convenience. Even if some questions do not apply to your situation, please answer those which do. *If some of the historical or financial information cannot be compiled without major effort, please give your best estimate of the figures concerned.* With a sample of relatively small size to represent the 35,000 operating school districts in the country, *every return counts heavily.*

Should you have any questions or comments regarding the survey, do not hesitate to get in touch with me. Thank you for your cooperation.

Sincerely,

Eleanor P. Godfrey

Eleanor P. Godfrey
Project Director
Study of Audiovisual Media

I. Legal Name of School District ____________________

II. Street Address ____________________

III. City ____________________ County ____________ State ____________

IV. Please circle the lowest and highest grades included in your school district.
11

K 1 2 3 4 5 6 7 8 9 10 11 12 13 14

V. If you have secondary schools in your district, please circle your lowest starting grade for secondary education.

6 7 8 9 10 11

VI. Who is responsible for administering audiovisual activities at the school district level?

Name ____________________ Position ____________________

VII. How much of this person's time is regularly scheduled for audiovisual duties?

1 ______ Full time 2 ______ Part time 3 ______ As needed; no regular time allotment

SUPERINTENDENT'S OVERVIEW OF AUDIOVISUAL MEDIA

VIII. In general, do you think audiovisual materials (including radio and television programs) are best used as an integral part of a course? For supplementary information? Or to highlight a special unit? *Please comment.*

IX. What major problems do you have in using audiovisual materials in your teaching program?

A.

B.

C.

X. In the next two years, what plans do you have for use of the following media? Please check the appropriate column for each of the media listed.

MEDIA	1 PLAN TO TRY	2 CONTINUE PRESENT USE	3 EMPHASIZE USE	4 DE-EMPHASIZE USE	5 NO PLAN TO TRY
Broadcast television					
Closed circuit television					
Radio					
Language laboratories					
Teaching machines					
16 mm sound films					
8 mm sound films					
Filmstrips					
Disc and tape recordings					
Overhead and opaque projectors					
Other *(please specify)*					

Name ____

Position ______________________________________

Date ____

AUDIOVISUAL MEDIA IN PUBLIC SCHOOLS AND FACTORS INFLUENCING THEIR USE

ENROLLMENT AND EXPENDITURES

1. Please give the number of schools and full-time teachers as of your *first* regular report date for the *fall* terms of 1960 and 1955.

TYPE OF SCHOOL	NUMBER OF SCHOOLS		NUMBER OF FULL-TIME TEACHERS	
	1960	1955	1960	1955
Elementary	11		17	
Secondary	27		33	
TOTAL NUMBER	43		49	

2. How many pupils were enrolled as of your *first* regular report date for the *fall* terms of 1960 and 1955?

3. What was the average daily attendance for 1959-60 *and* 1955-56?

TYPE OF SCHOOL	PUPIL ENROLLMENT		AVERAGE DAILY ATTENDANCE	
	1960	1955	1959-60	1955-56
Elementary 11				
Secondary 31				
TOTAL NUMBER 51				

4. What was the *total annual expenditure* (including current expenses, capital outlay, and debt service) for your district in 1959-60? In 1955-56?

1959-60 $_______________ 11 1955-56 $_______________ 17

5. What were the *total current expenses* (excluding capital outlay and debt service) for your district in 1959-60? In 1955-56?

1959-60 $_______________ 23 1955-56 $_______________ 29

6. What was the total expenditure for *instructional materials* (including audiovisual equipment and materials) for your district in 1959-60? In 1955-56?

1959-60 $_______________ 35 1955-56 $_______________ 41

7. What is your *total annual budget* for 1960-61 (including current expenses, capital outlay, and debt service)?

1960-61 $_______________ 47

8. What is you *current expense budget* for 1960-61 (excluding capital outlay and debt service)?

1960-61 $_______________ 53

9. What is your *instructional materials budget* for 1960-61 (including audiovisual equipment and materials)?

1960-61 $_______________ 59

AUDIOVISUAL EXPENDITURES AND ADMINISTRATION

10. Has your district received National Defense Education Act (Title III) funds for projects in science, mathematics, and modern foreign languages?
11

1____Yes 2____No

(IF NO, PLEASE GO TO QUESTION 14)

11. Please list the major items of equipment and materials acquired with the aid of NDEA funds.

____

____

____

12. Please give the total amount of Title III NDEA project money (local and state matching funds plus Federal funds) spent by your school district in each of the last three years. Use "O" where no NDEA funds were spent.

1960-61 $__________ 1959-60 $__________ 1958-59 $__________
24 30 36

13. Please give the amount of Title III NDEA project money (local and state matching funds plus Federal funds) spent *for audiovisual equipment and materials* in each of the last three years. Use "O" where no NDEA funds were spent.

1960-61 $__________ 1959-60 $__________ 1958-59 $__________
42 48 54

14. If your district has received no NDEA funds during any of the past three years, please check the most accurate reason. If no listed answer applies, use "Other" and supply appropriate details.

REASON	YEAR		
	1960-61	1959-60	1958-59
1 Application procedures not developed in time			
2 Applied, but did not receive funds			
3 More pressing needs; no matching funds available			
4 District policy against this use of Federal funds			
Other			
	60	61	62

15. Other than money spent for NDEA projects reported in *Question 13,* how much did you spend for audiovisual equipment, materials, building adaptation, etc., in each of the last three years? If exact figures are not available, give estimated amount, preceded by "E". Use "O" where no funds were spent.

ITEM OF AUDIOVISUAL EXPENDITURE	AMOUNT OF EXPENDITURE		
	1960-61	1959-60	1958-59
Equipment; including equipment for new buildings 11	$	$	$
Materials; purchased and rented 29	$	$	$
Maintenance of equipment and materials 47	$	$	$
Building adaptation; dark shades, etc. 11	$	$	$
Transportation of equipment and materials 26	$	$	$
Other *(please specify)* 41	$	$	$
TOTAL EXPENDITURE 56	$	$	$

☐ ☐☐ ☐☐☐ ☐☐ ☐ ☐

16. How do you budget your annual school district expenditures for audiovisual equipment, materials, etc.? Please check the most accurate description. If no listed answer applies, use "Other" and supply appropriate details.
11

1 _____ No fixed budget item; spend as need arises and funds are available

2 _____ Budget for specific items; projectors, film purchases, etc.

3 _____ Budget a certain percentage of the instructional materials budget;

_____________ % of instructional materials budget
12

4 _____ Budget a fixed amount per pupil; $ ___________ per pupil
14

_____ Other ____

____

____

17. How are audiovisual activities coordinated for your school district? Please check the most accurate description. If no listed answer applies, use "Other" and supply appropriate details.
16

1 _____ No central coordination (each school administers its own program)

2 _____ Coordination through superintendent's office (no formal department)

3 _____ Coordination through audiovisual department

4 _____ Coordination through instructional materials center (audiovisual combined with library)

5 _____ Coordination through communications center (audiovisual combined with radio and/or television)

_____ Other ____

____

____

18. Who coordinates audiovisual activities in each of the schools in your district? Please give the *number* of schools in which the coordinator holds any of the following positions.

CHIEF POSITION TITLE OF COORDINATOR	NUMBER OF SCHOOLS	
	ELEMENTARY	SECONDARY
Principal or assistant principal 17		
School librarian 23		
Classroom teacher 29		
School secretary 35		
Audiovisual coordinator *(only)* 41		
Schools with *no building coordinator* 47		
Other *(please specify)* 53		
TOTAL NUMBER OF SCHOOLS 59		

AUDIOVISUAL EQUIPMENT, MATERIALS, AND FACILITIES

19. IN COLUMN A: Please give the *total number of units* of the following audiovisual equipment and materials *recorded on a central inventory* as owned, held on long-term loan, or leased-to-own by your school system.

IN COLUMN B: Please indicate how these units are distributed among elementary and secondary schools. (Draw a line through the school distribution columns if: you do not assign units to individual schools; you do not keep separate figures for elementary and secondary schools; or you have only one school in your district.)

IN COLUMN C: Please estimate how many units of equipment and materials are used by individual schools *in addition to those listed on your central inventory.* (If you have no such equipment, draw a line through *Column C.)*

IN COLUMN D: Please estimate the number of additional units of equipment and materials *needed to serve your present teaching program and enrollment.*

TYPE OF EQUIPMENT AND MATERIAL	ON CENTRAL INVENTORY			NOT ON CENTRAL INVENTORY	NEEDED	
	A. TOTAL NUMBER 1	B. SCHOOL DISTRIBUTION		C. ESTIMATED NUMBER 4	D. ESTIMATED NUMBER 5	
		2 ELEM.	3 SECOND.			
16 mm sound projectors						10
Comb. slide-filmstrip projectors						11
Record players *(all speeds)*						12
Tape recorders						13
Radio receivers						14
Television receivers						15
Portable public address systems						16
Central sound systems						17
Overhead projectors						18
Opaque projectors						19
Filmstrip *(only)* projectors						20
2 x 2 slide *(only)* projectors						21
Language laboratory installations						22
8 mm sound projectors						23
16 mm sound films: titles						24
Total number of prints						25
Filmstrips: titles						26
Total number of prints						27
Disc recordings *(all copies)*						28
Tape recordings *(all copies)*						29
2 x 2 slides *(all copies)*						30
Other (*please specify*)						31

☐ ☐☐ ☐☐☐ ☐☐ ☐ ☐

20. **Do you have equipment and facilities (either in a school district center or in individual schools) for *producing* your own audiovisual and communications materials?**
11

1______**Yes** 2______**No**

[IF YES:]

Please check *all* that apply.

1______ **Motion picture cameras**

2______ **35 mm still cameras**

3______ **Darkroom facilities**

4______ **Radio broadcasting facilities**

5______ **Transparency-making facilities**

6______ **TV broadcasting facilities**

7______ **Sound recording facilities**

8______ **Display-making facilities**

9______ **Other *(please specify)*** ______________________________

____

____

FILMS, RADIO, AND TELEVISION

21. **Approximately what *percent* of the *total number* of films used in your schools was obtained from each of the following sources? (Include short-term loans.)**
13

__________**% State Department of Education**

__________**% Cooperative, regional, or county film libraries**

__________**% City or county public libraries**

__________**% University film libraries**

__________**% Business or trade associations**

__________**% Non-profit or religious organizations**

__________**% U. S. Government agencies**

__________**% Your own school system**

__________**% Other *(please specify)*** ______________________________

____

__________ ____

100 **%**

22. **Do you use filmed courses (e.g., physics, chemistry, and biology, in your teaching program?**
31

1______**Yes** 2______**No**

23. **Do you plan to use filmed courses within the next two years?**

1______**Yes** 2______**No**

24. **Do you use television and/or radio broadcasts** ***during regular school hours?***
33

1_______**Yes** 2_______**No**

[IF YES:]
Please indicate the type of use.

TYPE OF USE	**MEDIA**	
	TV	**RADIO**
1 **Broadcasts of national interest; e.g., Inauguration**		
2 **Broadcasts of local interest; e.g., basketball tournament**		
3 **Complete courses; e.g., science, language**		
4 **Regular part of course; e.g., laboratory demonstrations**		
5 **Occasional programs; e.g., guidance, music**		
Other ***(please specify)***		
	34	35

25. **Have you installed closed-circuit television equipment either on a system-wide basis or for use in individual schools?**

System-wide 1_______**Yes** 2_______**No**

Individual schools 1 _______**Yes** 2 _______**No**

26. **Do you use television and/or radio programs for in-service teacher training?**

Television 1_______**Yes** 2 _______**No**

Radio 1 _______**Yes** 2_______**No**

Please add any comments you would like to make about your audiovisual program.

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DEFINITIONS

AUDIOVISUAL EQUIPMENT AND MATERIALS: A collective reference for the items listed below.

A. Commonly used equipment
1. 16 mm sound motion picture projectors
2. 35 mm slide and filmstrip projectors
3. Overhead and opaque projectors
4. Record players and tape recorders
5. Radio and television receivers
6. Public address systems

B. Commonly used materials
1. Sound films
2. Filmstrips and 2 x 2 slides
3. Tape and disc recordings

C. Newly available equipment
1. Teaching machines
2. Language laboratories
3. Closed-circuit television
4. 8 mm sound motion picture projectors

SCHOOL: A school center serving an attendance area, usually under the supervision of a principal or head teacher. A school may accommodate any combination of grades under a single head and may occupy more than one building in the same or separate sites. More than one school may be housed in one school plant, as is the case when elementary and secondary programs are located in the same building but operate under separate principals.

ELEMENTARY SCHOOL: A school which provides elementary education as determined under state law. Kindergarten pupils should be included in elementary school enrollment figures.

SECONDARY SCHOOL: A school which provides secondary education as determined under state law. Junior college pupils should be included in secondary school enrollment figures.

FULL-TIME TEACHER: All full-time instructional personnel in your school district, including teachers, principals, supervisors, librarians, and psychological and guidance personnel.

EXPENDITURE: **If Accounts Are Kept on the Accrual Basis** – The total charges incurred, whether paid or unpaid, for current expenses, capital outlay, and debt service.

If Accounts Are Kept on the Cash Basis – The actual disbursements made for current expenses, capital outlay, and debt service.

INSTRUCTIONAL MATERIALS EXPENDITURE: The total amount spent for textbooks, school library books, workbooks, paper, ink, pencils, chalk, maps, charts, and other supplies used by pupils or the instructional staff, including the amount spent for all audiovisual items listed above. Salaries should be excluded from instructional materials expenditure.

AUDIOVISUAL MEDIA IN THE PUBLIC SCHOOLS

SPONSORED BY:

The Department of Health, Education, and Welfare
Office of Education
Washington 25, D.C.

CONDUCTED BY:

The Bureau of Social Science Research, Inc.
1424 Sixteenth Street, N.W.
Washington, D.C. 20036

A FOLLOW-UP STUDY

BUDGET BUREAU #51-6316
APPROVAL EXPIRES JUNE 30, 1964

BUREAU OF SOCIAL SCIENCE RESEARCH, INC.
1424 Sixteenth Street, N.W. Washington, D.C. 20036

AUDIOVISUAL MEDIA IN THE PUBLIC SCHOOLS: A FOLLOW-UP STUDY

Conducted for The U.S. Office of Education

ENROLLMENT AND AUDIOVISUAL INVENTORY

1. Name of School District____

2. Who is responsible for administering audiovisual activities for the school district?

   Name____________________________ Position____________________________

3. How much of this person's time is regularly scheduled for audiovisual duties?

   ☐ Full-Time ☐ Part-Time ☐ As needed; no regular time allotted

4. In the table below, please give the number of schools, full-time teachers, and pupils enrolled as of your *first* report date for the fall of 1963. (The figures in the 1960 columns were taken from your 1961 questionnaire.

TYPE OF SCHOOL	NUMBER OF SCHOOLS		NUMBER OF FULL-TIME TEACHERS		PUPIL ENROLLMENT	
	1960	1963	1960	1963	1960	1963
Elementary						
Secondary						
TOTAL						

Elementary School: A school which provides elementary education as determined under state law. Kindergarten pupils should be included in elementary school enrollment figures.

Secondary School: A school which provides secondary education as determined under state law. Junior college pupils should be included in secondary school enrollment figures.

Full-Time Teacher: All full-time instructional personnel in your school district, including teachers, principals, supervisors, librarians, and psychological and guidance personnel.

5. IN COLUMN A, we have recorded the inventory figures from the 1961 questionnaire.

IN COLUMN B, please give the *total number of units* of the following items of audiovisual equipment now owned by your school system, whether they are listed on a central inventory or owned by individual schools. If exact figures are not available, *please estimate.*

IN COLUMN C, please estimate the number of additional units of equipment needed *to serve your present teaching program and enrollment.*

	TYPE OF EQUIPMENT	TOTAL NUMBER OWNED		ADDITIONAL NUMBER
		A. 1961	B. 1963	C. NEEDED
1	16 mm sound projectors			
2	Comb. slide-filmstrip projectors			
3	Filmstrip (only) projectors			
4	2 x 2 slide (only) projectors			
5	Opaque projectors			
6	Overhead projectors			
7	Television receivers			
8	Language laboratory installations			
9	Teaching machines			
10	Programmed texts			
11	Record players (all speeds)			
12	Tape recorders			
13	Radio receivers			
14	8 mm sound projectors			

6. Have you installed closed-circuit television equipment either on a system-wide basis or in individual schools since 1961?

☐ Yes ☐ No, but are considering ☐ No, and no plans for closed-circuit TV

7. IF YES: What kind of installation do you have?____________________________

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8. Have you introduced any of the following types of instruction into your school system since 1961? *PLEASE CHECK ONE ANSWER FOR EACH MEDIUM.*

TYPE OF INSTRUCTION	USED IN 1961	HAVE INTRODUCED SINCE 1961	HAVE NOT INTRODUCED
1 Regular television instruction (complete course or integral part of course). . .	☐	☐	☐
2 Overhead projector	☐	☐	☐
3 Programmed texts	☐	☐	☐
4 Teaching machines	☐	☐	☐
5 Language laboratory	☐	☐	☐

APPLICABILITY OF NEWER MEDIA

9. Below is a list of factors that influence educators to try a new type of instruction. Which of them have been most important in your decision to encourage the use of ANY of the five media given below? Please *circle* the numbers corresponding to the THREE most important factors in helping you make your decision. If you do not use one of the media, circle the "0" on the appropriate row.

1 Personal experience with technique
2 Speeches at professional meetings
3 Articles in professional journals
4 Technical or research reports
5 Demonstrations at professional meetings
6 Observation of a program in action
7 Talking with neighboring superintendents
8 Demonstrations by the manufacturer
9 Requests from teachers
10 Requests from school board
11 Requests from administrative personnel
12 Requests from parents

PLEASE CIRCLE ONLY THREE NUMBERS FOR EACH MEDIUM. IF YOU DO NOT USE A TECHNIQUE, CIRCLE THE "0" AT THE BEGINNING OF THE ROW.

A TELEVISION INSTRUCTION

0 1 2 3 4 5 6 7 8 9 10 11 12

Other (specify)____________________

B OVERHEAD PROJECTOR

0 1 2 3 4 5 6 7 8 9 10 11 12

Other (specify)____________________

C PROGRAMMED TEXTS

0 1 2 3 4 5 6 7 8 9 10 11 12

Other (specify)____________________

D TEACHING MACHINES

0 1 2 3 4 5 6 7 8 9 10 11 12

Other (specify)____________________

E LANGUAGE LABORATORY

0 1 2 3 4 5 6 7 8 9 10 11 12

Other (specify)____________________

10. Below is a list of factors that make it *difficult* for educators to introduce a new type of instruction. Which of them have been most important in your decision NOT to encourage the use of one or more of the five media given below? Please *circle* the numbers corresponding to the THREE most important factors in helping you make your decision. If you are presently using any of the media, circle the "0" on the appropriate line.

1 Building program takes priority

2 Salary raises take priority

3 Extensive classroom remodeling required to use medium

4 Technique too expensive for results achieved

5 Too few good materials available to use with medium

6 School system too small to justify use of medium

7 Alternative teaching methods just as good or better

8 Need more evidence of the value of the technique

9 Too difficult to schedule the use of the equipment

10 Materials available do not fit our curriculum well

11 Preparation of materials takes too much of teachers' time

12 Too few teachers are trained to use the technique

13 School board is not convinced of the value of technique

14 Teachers are not convinced of the value of technique

15 Parents are not convinced of the value of technique

16 Use of the medium in neighboring districts has not been too successful

PLEASE CIRCLE ONLY THREE NUMBERS FOR EACH MEDIUM. IF YOU USE A TECHNIQUE, CIRCLE THE "0" AT THE BEGINNING OF THE ROW.

A TELEVISION INSTRUCTION

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Other (specify)________________________________

B OVERHEAD PROJECTOR

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Other (specify)________________________________

C PROGRAMMED TEXTS

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Other (specify)________________________________

D TEACHING MACHINES

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Other (specify)________________________________

E LANGUAGE LABORATORY

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Other (specify)________________________________

EVALUATION AND FUTURE PLANS

11. What criteria do you use for evaluating the effectiveness of the use of audiovisual media in your district?

A.

B.

C.

12. For each of the audiovisual media listed below, please give the grade level(s) and subject(s) in which there has been the *most effective* use of the medium. (For example: Radio–6th grade biology; 12th grade English). *PLEASE ANSWER FOR ALL MEDIA WHICH YOUR TEACHERS HAVE BEEN ABLE TO USE EFFECTIVELY.*

MEDIA	GRADE LEVEL(S) AND SUBJECT(S) WHERE USED EFFECTIVELY
1 Sound films:	
2 Filmstrips:	
3 Records:	
4 Radio:	
5 Tape recordings:	
6 Opaque projector: . . .	
7 2 x 2 slides:	
8 Television:	
9 Programmed texts: . . .	
10 Teaching machines: . .	
11 Overhead projector: . .	
12 Language Laboratory:	

13. Looking ahead for the next two or three years, what use do you see in your school district for each of the following instructional techniques? *PLEASE CHECK ONE ANSWER FOR EACH MEDIUM.*

MEDIA	NO PLAN TO USE	EXPERIMENTAL USE	CONTINUATION OF PRESENT LEVEL OF USE	INCREASED USE
1 Sound films	☐	☐	☐	☐
2 Filmstrips	☐	☐	☐	☐
3 Records	☐	☐	☐	☐
4 Tape recordings	☐	☐	☐	☐
5 2 x 2 slides	☐	☐	☐	☐
6 Overhead projector	☐	☐	☐	☐
7 Opaque projector	☐	☐	☐	☐
8 Television instruction	☐	☐	☐	☐
9 Language laboratory	☐	☐	☐	☐
10 Radio instruction	☐	☐	☐	☐
11 Programmed texts	☐	☐	☐	☐
12 Teaching machines	☐	☐	☐	☐

14. A recent study suggests that the school administrator must take the initiative in introducing a new instructional technique, such as a language laboratory, television instruction, programmed learning, etc. Then he must convince the faculty, the school board, and sometimes the parents of its value. In general, how receptive have these three groups been to the introduction of new audio-visual techniques in your school system?

Name____________________ Position____________________